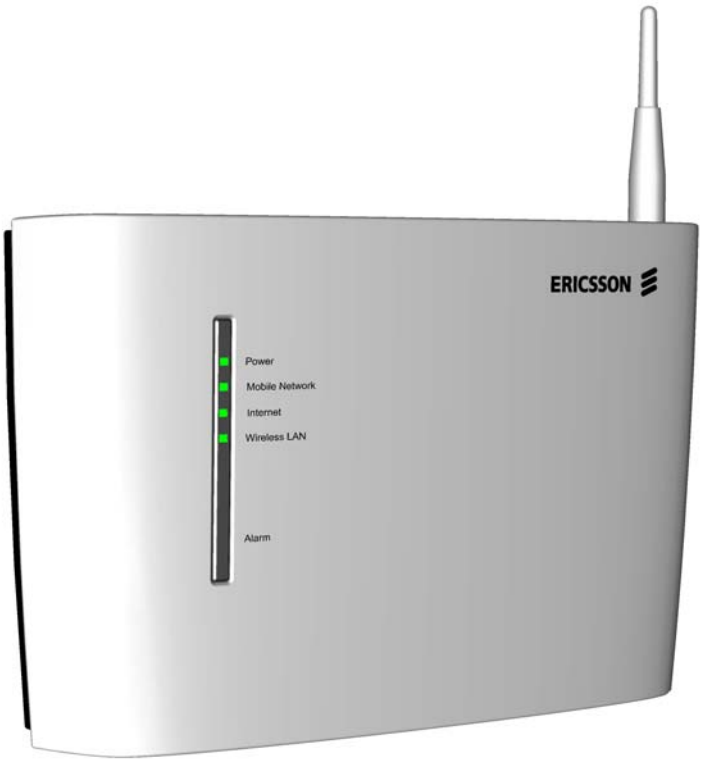
Ericsson W20

Fixed Wireless Terminal for WCDMA/HSDPA Mobile Networks

User's Guide



ERICSSON

Ericsson W20

Fixed Wireless Terminal for WCDMA/HSDPA Mobile Networks

User's Guide

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1 Introduction

This chapter describes the structure of this guide and gives a brief product overview.

1.1 Structure of this Guide

This User's Guide contains information that is needed to configure and manage the Ericsson W20 Fixed Wireless Terminal (FWT). The following chapters are included:

- **Chapter 1** – "Introduction" – provides information about this guide and gives a brief product overview.
- **Chapter 2** – "Configuration and Management" – provides detailed information about how to perform configuration and management of the Ericsson W20.
- **Chapter 3** – "PC Configuration" – gives instructions for configuring your computers to work with the Ericsson W20.
- **Chapter 4** – "Trouble-Shooting" – tells you how to solve a number of issues that could occur during installation, configuration, and use of the Ericsson W20.
- The **Glossary** includes abbreviations and explanations to technical terms used in this guide.

1.2 Product Overview

The Ericsson W20 FWT is an advanced small office and home router with wireless Internet access. The key benefits of the product are:

- **Wireless Broadband Services at Reliable High Speed**
  The Ericsson W20 uses WCDMA/HSDPA radio access to provide high-speed data capabilities to the local network.
- **Advanced Networking**
  The Ericsson W20 supports an advanced local network setup. It provides IP routing, Ethernet switching, DHCP service, and NAT.

- **File Sharing**
  Network storage is supported through USB connection of up to two mass storage devices at the same time.

- **Local Wireless Access with High-level Security**
  The Ericsson W20 is a WLAN access point for the wireless local network including WEP, WPA, and WPA2 with pre-shared keys for WLAN security.

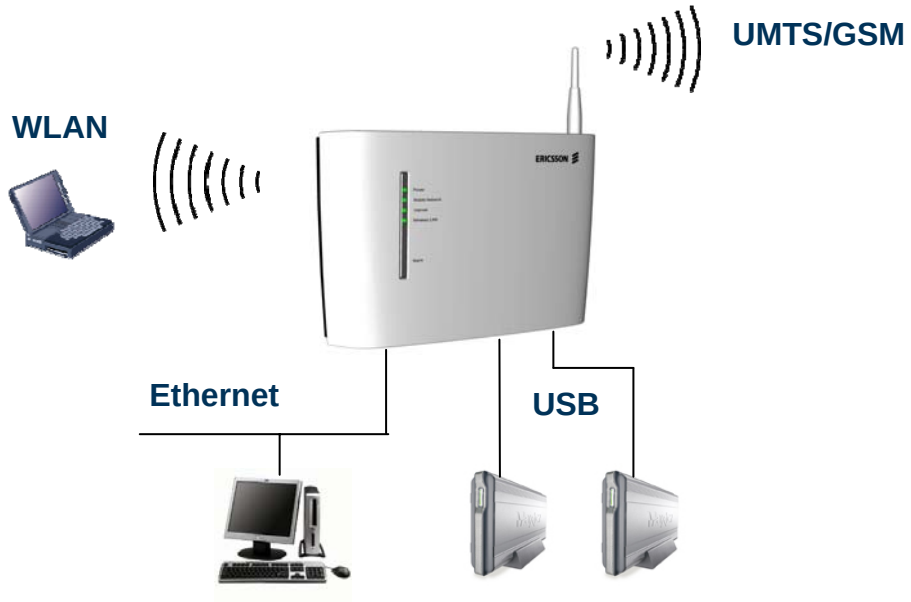

Figure 1 Example of Ericsson W20 Setup

For more information about the Ericsson W20, see **www.ericsson.com/fwt**

1.2.1 Indicators and Connectors

The Ericsson W20 is equipped with five status indicators located on the front panel of the unit, see Figure 1. A general description of each indicator is provided in the table on the next page (from top to bottom):

Table 1 Front Panel Indicators

Text	Status	Description
Power	Green	Power is on.
	Unlit	Power is off.
Mobile Network	Green	The UMTS network is available.
	Yellow	The GSM network is available.
	Flashing	Searching for a connection.
	Unlit	No connection to the mobile network.
Internet	Green	Connection to Internet established.
	Unlit	No Internet connection.
Wireless LAN	Green	The wireless LAN is active.
		The wireless LAN is inactive.
Alarm	Red	Error. Various error conditions are specified on the **Overview** web page.
	Unlit	No error.

The Ethernet LAN connectors (**LAN1**- **LAN4**) on the connectors' panel have two built-in indicators each.

The left indicator shows the speed of data traffic between the Ericsson W20 and the connected client. If the speed is 100 Mbps, the indicator is green. When the indicator is unlit, the speed is 10 Mbps.

The indicator to the right is green when a LAN connection is established and flashes to show data traffic activity.

The connectors on the Ericsson W20 are positioned as shown in the following illustration:

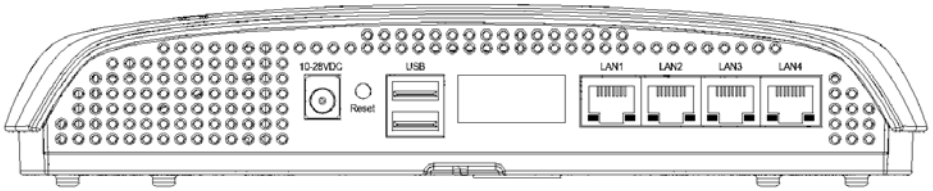

Figure 2 Connectors panel

A description of each connector is provided in the table below (from left to right):

Table 2 Connectors

Label	Description
10-28 VDC	Power input for connecting the power supply adapter.
Reset	Button used to restore the Ericsson W20 configuration to factory default settings. The following procedure resets all configurable values back to factory default, including the Ericsson W20 login user name and password. 1. Disconnect the power cable from the Ericsson W20. 2. Press and hold the **Reset** button with the tip of a pen and then reconnect the power cable. Keep the button pressed for at least 20 seconds. 3. The Ericsson W20 restarts and comes online with the factory default settings.
USB	USB connectors, for connecting the Ericsson W20 to USB devices.
LAN 1 - 4	Ethernet LAN connectors (RJ45), for connecting the Ericsson W20 to client PCs or an Ethernet switch/hub.

2 Configuration and Management

Follow the instructions in the **Quick Installation Guide** to install the Ericsson W20. When the installation is finished, the Ericsson W20 internal web pages are available for configuration and status control.

This chapter provides detailed information about configuration and management of the Ericsson W20.

2.1 Accessing Internal Web Pages

Start a web browser and type **http://192.168.1.1** in the **Address** (URL) field. The Ericsson W20 **User login** page is displayed.

Note: If you change the Ericsson W20 internal IP address, you have to use the new address to access the web pages.

Figure 3 User Login page

The default login user name and password are both “user”. You are recommended to change the password, see section 2.2.1 – “Changing Password”.

Type **`user`** in both the **User name** and **Password** fields. Click **Log In**. The **Overview** page is displayed:

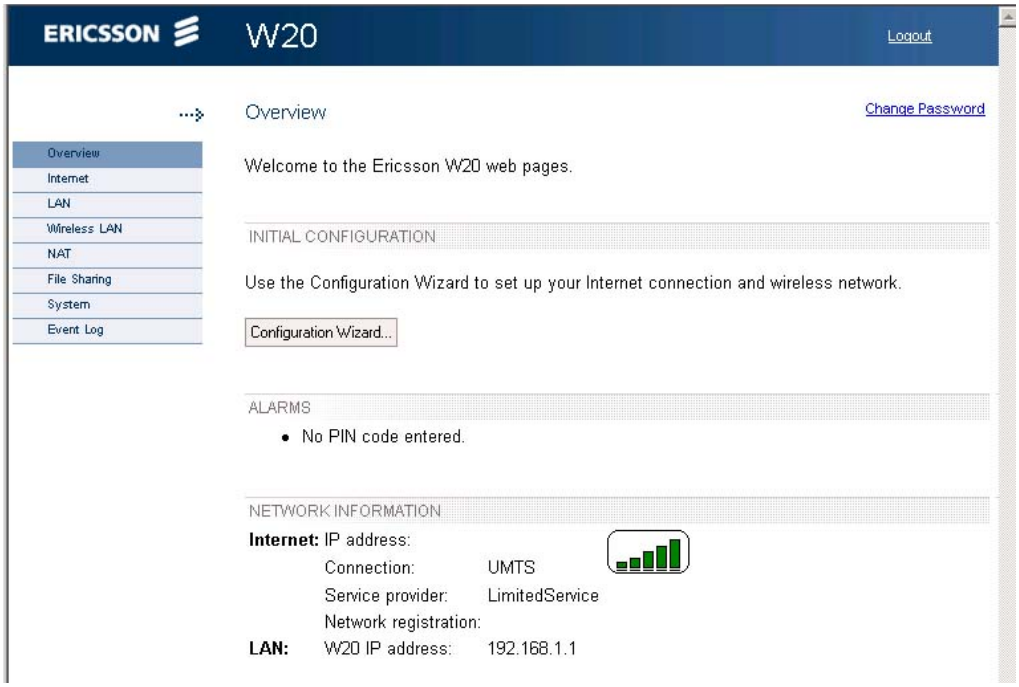

Figure 4 Overview page

The left-hand menu includes configuration topics described one by one in the following sections.

Apart from the links menu to the left, each web page includes a Logout link to make it possible to log out whenever it is desired.

2.2 Overview Page

The **Overview** page includes the possibility to change password, the entrance to the Configuration Wizard, see section 2.3 – “Configuration Wizard”, alarm information, and basic network information.

2.2.1 Changing Password

The default Ericsson W20 login password is “user”. You are recommended to change the password.

1. Click Change Password on the **Overview** page. The **Change Password** page is displayed:

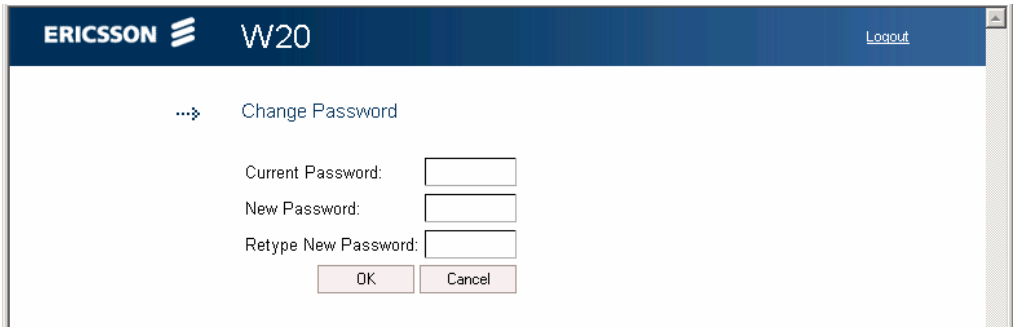

Figure 5 Change Password page

2. Type the old password in the **Current Password** field. If it is the first time you change password, the old password is **`user`**.

3. Type the new password in the **New Password** and **Retype New Password** fields.

   Note: The password is case-sensitive (distinguish between uppercase and lowercase letters) and can include up to eight characters (letters and/or numbers).

4. Click **OK**.

2.2.2 Alarms

Alarms are generated when it is impossible to send or receive data. If an alarm occurs, the **Alarm** indicator on the Ericsson W20 front panel is red and one of the following messages is displayed in the **Alarms** section on the **Overview** page:

`No alarms detected`	The Ericsson W20 has not detected any alarm.
`Invalid SIM card inserted`	There is no SIM card available, or the SIM card is incorrectly inserted into the Ericsson W20 unit.
`No PIN code entered`	A PIN code is required to establish an Internet connection.
`Incorrect PIN code entered`	The entered PIN code is not the correct one.
`SIM card blocked`	The SIM card is blocked. The PUK is required to unblock the SIM card.

`SIM card permanently blocked`	The SIM card cannot be unblocked. A new SIM card is required.
`Alarm detection not working`	The Ericsson W20 alarm detection function is not working.
`Unknown alarm`	The Ericsson W20 cannot identify the alarm.

For information about how to react on an alarm, see section 4 – “Trouble-Shooting”.

2.2.3 Network Information

The **Network Information** section on the **Overview** page includes a selection of the Internet and LAN settings. These are also displayed on the **Internet** and **LAN** pages respectively.

The **Internet** information includes connection status and basic settings. Details about the following items are displayed:

IP Address	The IP address automatically assigned to the Ericsson W20 by the mobile network.

Connection	The radio access technique currently used to enable Internet access. It can be either:
	`HSDPA`
	`UMTS` or
	`GPRS`

Service provider	The name of the mobile network operator.

Network registration	The current mobile network registration mode, which can be one of the following:
	`Not registered, not searching`
	`Registered, home network`
	`Searching`
	`Registration denied`
	`Unknown`
	`Roaming`

The **LAN** (Local Area Network) section includes information about the following item:

W20 IP Address	The local IP address of the Ericsson W20.

2.3 Configuration Wizard

The Configuration Wizard guides you step by step through the basic setup of the mobile network connection and optionally for the wireless LAN access point.

Click **Configuration Wizard…** on the **Overview** page to start the wizard. The first page of the wizard; **Internet Access: SIM Authentication** is displayed:

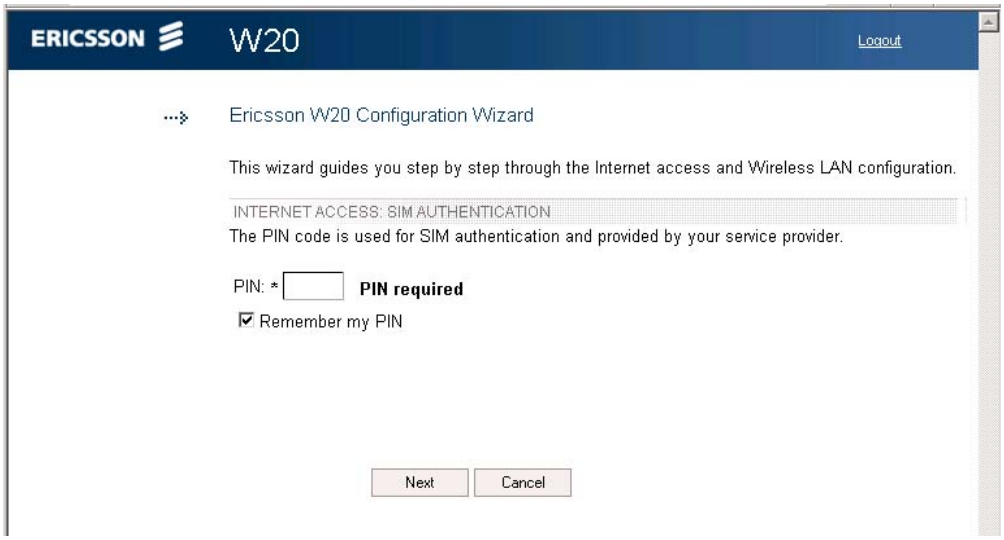
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
This wizard guides you step by step through the Internet access and Wireless LAN configuration.
INTERNET ACCESS: SIM AUTHENTICATION
The PIN code is used for SIM authentication and provided by your service provider.
PIN: *
PIN required
Remember my PIN
Next
Cancel

Figure 6 Internet Access: SIM Authentication page

2.3.1 Internet Access

The first part of the Configuration Wizard includes Internet authentication. Depending on the current Internet service setup, the requests on authentication may differ. The service provider provides the required authentication details.

Note: Only enter details that you have received from your service provider and leave other fields empty.

SIM Authentication

The service provider provides you with a SIM card. This SIM card contains information about the subscription and is associated with a PIN (Personal Identification Number) and a PUK (Personal Unblock Key) code.

Type the PIN in the **PIN** field on the first page of the Configuration Wizard, see Figure 6. Thereafter, you can select the **Remember my PIN** check box. This makes SIM authentication automatic and you will not have to enter the PIN in case of a system restart. Click **Next** to proceed.

Note: If the "`PIN is locked`" message is displayed, no PIN is required. Click **Next** to proceed.

If three attempts have been made with the wrong PIN, the SIM card is blocked. The PUK is required to unblock the card. Click the Unblock SIM link. The **Unblock SIM** page is displayed:

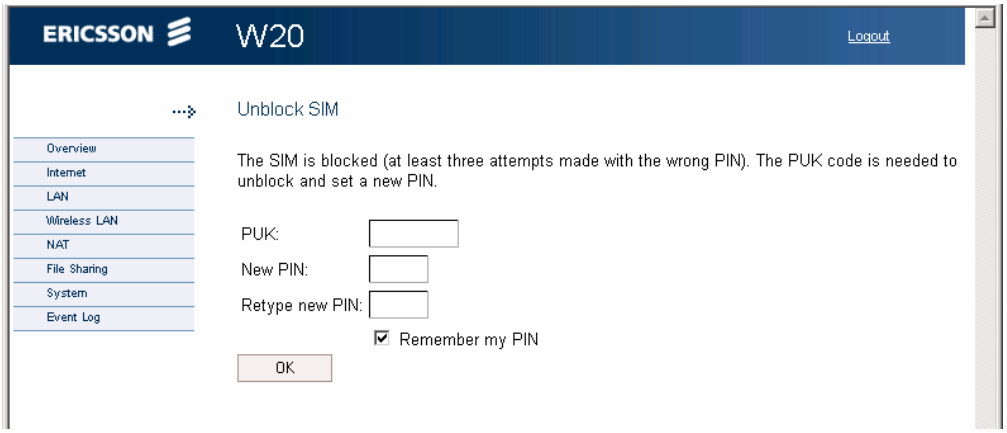

Figure 7 Unblock SIM page

Type the PUK in the **PUK** field and type a new PIN in the **New PIN** and **Retype new PIN** fields. Click **OK**. The **Overview** page is displayed and you have to click **Configuration Wizard…** to restart the wizard.

Note: If ten attempts have been made with the wrong PUK, the SIM card is permanently blocked. A new SIM card is required.

APN

An APN (Access Point Name) is a reference to the Internet access point on the service provider's network. It usually has the format <name.service_provider.country>. Different APNs for the GSM (2G) and UMTS (3G) networks may be required.

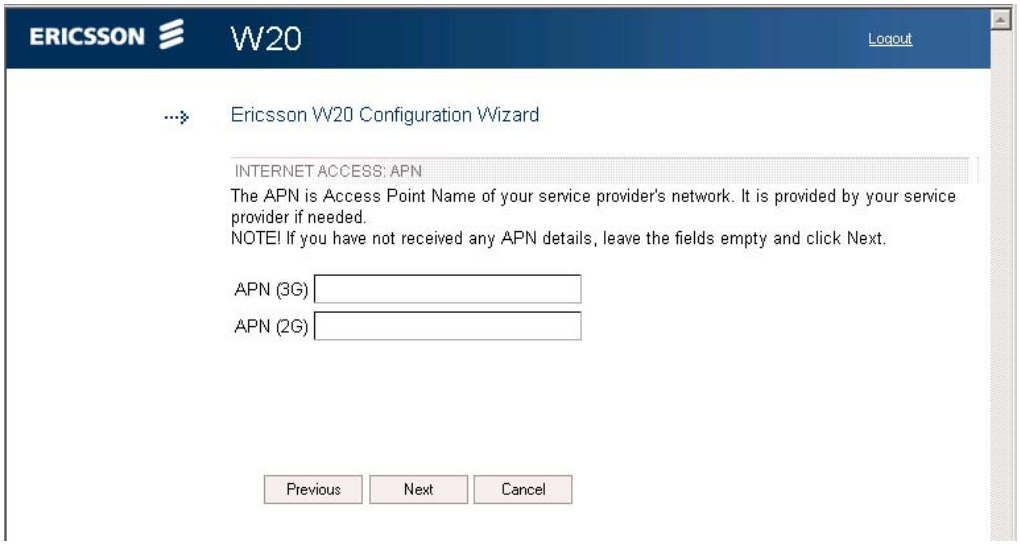
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
INTERNET ACCESS: APN
The APN is Access Point Name of your service provider's network. It is provided by your service provider if needed.
NOTE! If you have not received any APN details, leave the fields empty and click Next.
APN (3G)
APN (2G)
Previous
Next
Cancel

Figure 8 Internet Access: APN page

Type the APN(s) in the **APN (2G)** and **APN (3G)** fields on the **Internet Access: APN** page. Click **Next** to proceed.

PPP User Authentication

The PPP (Point-to-Point Protocol) Internet mode may require individual user authentication.

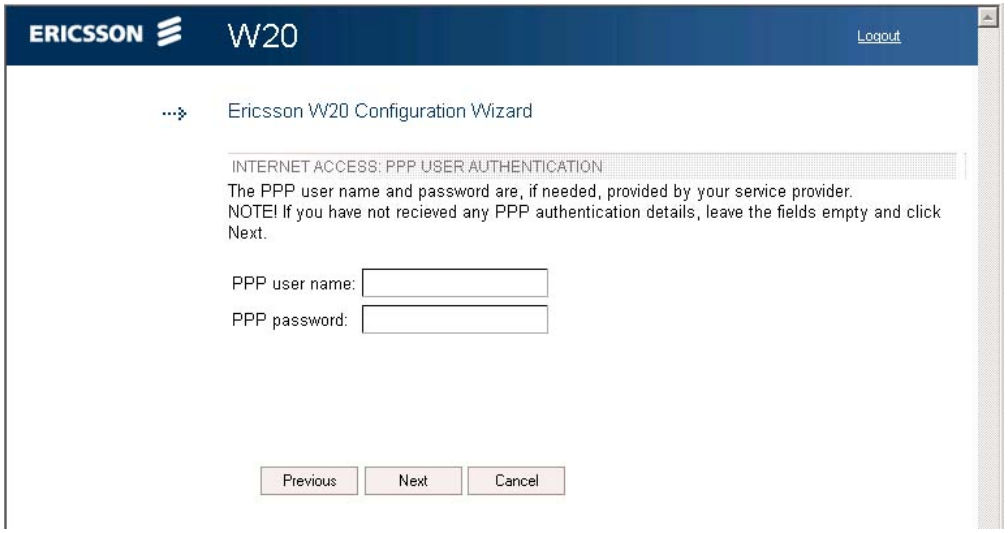
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
INTERNET ACCESS: PPP USER AUTHENTICATION
The PPP user name and password are, if needed, provided by your service provider.
NOTE! If you have not recieved any PPP authentication details, leave the fields empty and click Next.
PPP user name:
PPP password:
Previous
Next
Cancel

Figure 9 Internet Access: PPP User Authentication page

Fill in the **PPP user name** and **PPP password** fields on the **Internet Access: PPP User Authentication** page. Click **Next** to proceed.

2.3.2 Wireless LAN Access

The second part of the Configuration Wizard includes configuration of the Wireless LAN (WLAN). A Wireless LAN is a local network that communicates through wireless connections.

Note: The wireless setup typically requires configuration of both the Ericsson W20 and the wireless clients. For more information about configuring wireless clients, see 3.2 – “Wireless LAN Settings”.

Access Point

The Ericsson W20 is a WLAN Access Point (AP) for the local network providing the wireless client(s) with Internet and LAN access.

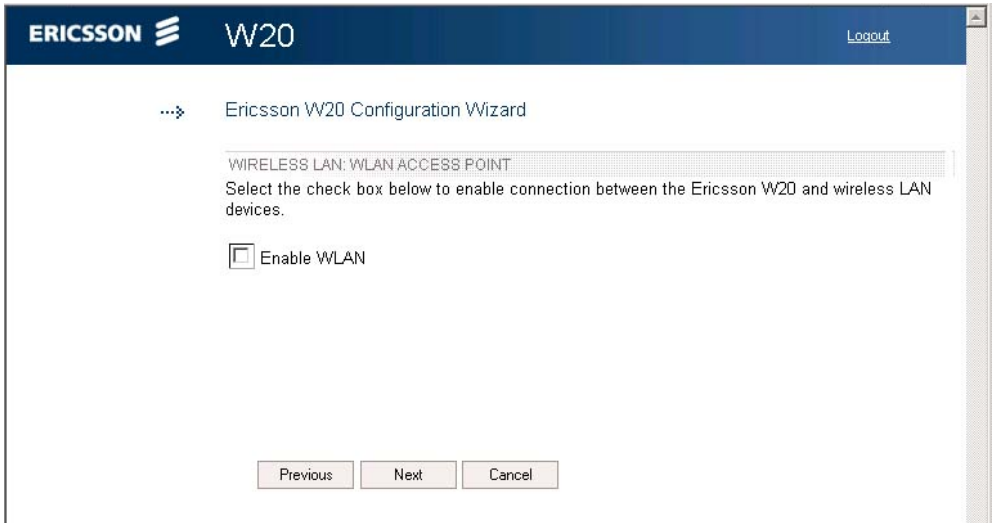

Figure 10 Wireless LAN: WLAN Access Point page

To enable connection of one or more wireless devices to the Ericsson W20, select the **Enable WLAN** check box on the **Wireless LAN: WLAN Access Point** page and click **Next** to proceed.

If you are not going to set up any wireless LAN, just click **Next** on the **Wireless LAN: WLAN Access Point** page. The last page of the wizard, where you can review and confirm your settings, is displayed:

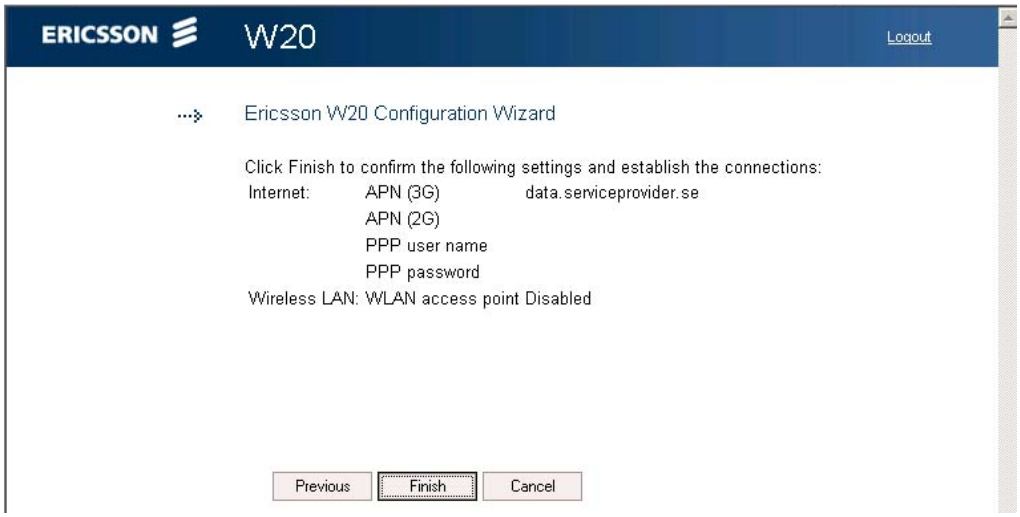

Figure 11 Confirm page

Check the information on this page and click **Finish** to confirm the settings.

Region

To make sure the Ericsson W20 operates on correct radio frequencies according to local regulations, you have to state in which region you reside. After this you cannot select any radio channel that would be against the regulations.

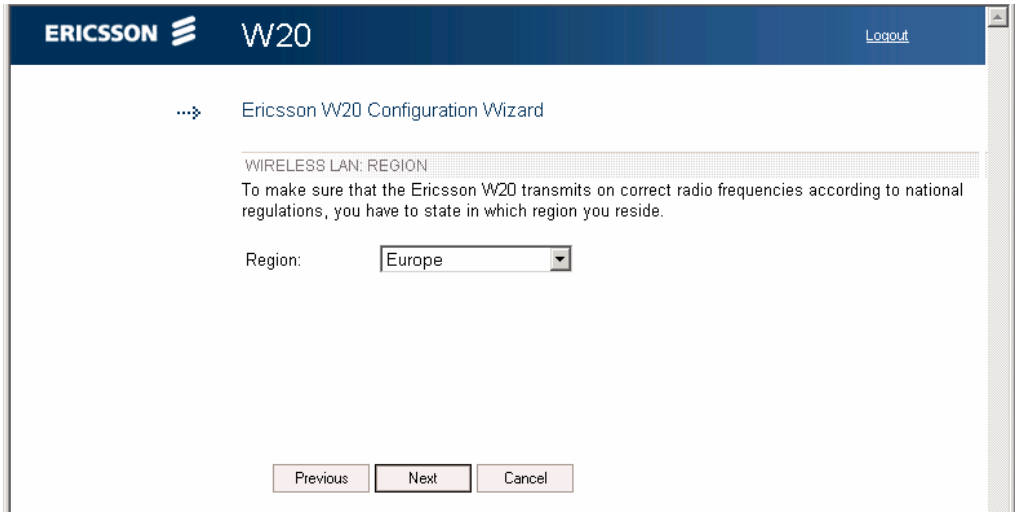

Figure 12 Wireless LAN: Region page

Select your country domain from the **Region** list on the **Wireless LAN: Region** page and click **Next** to proceed.

Channel Selection

The maximum number of regulatory channels to use for wireless communication is 13. Available channels depend on local regulations. You can select one of the available channels yourself, or let the Ericsson W20 automatically select a channel.

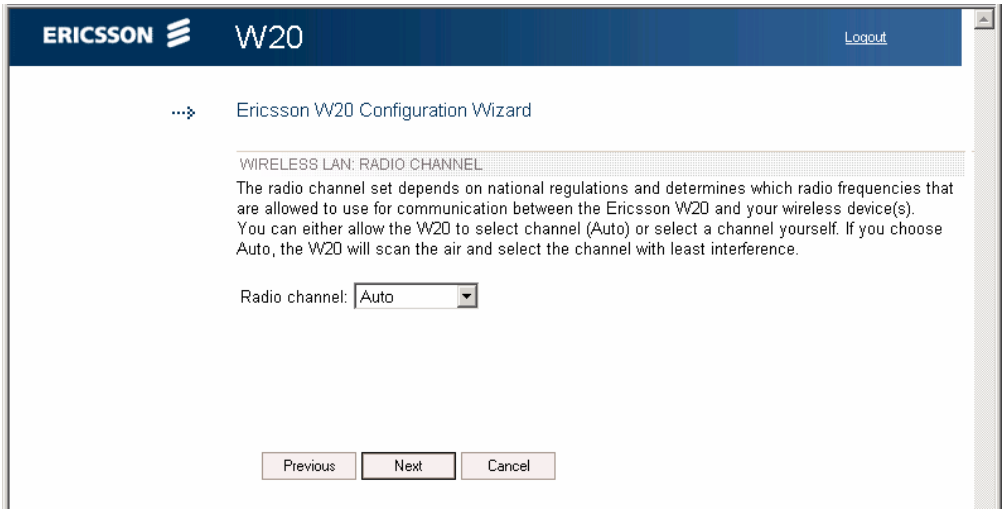
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: RADIO CHANNEL
The radio channel set depends on national regulations and determines which radio frequencies that are allowed to use for communication between the Ericsson W20 and your wireless device(s).
You can either allow the W20 to select channel (Auto) or select a channel yourself. If you choose Auto, the W20 will scan the air and select the channel with least interference.
Radio channel:
Auto
Previous
Next
Cancel

Figure 13 Wireless LAN: Radio Channel page

Select either **Auto** (recommended) or a channel number from the **Radio channel** list on the **Wireless LAN: Radio Channel** page. Click **Next** to proceed.

Network Name

All devices on the local wireless network share a common Service Set IDentifier (SSID) or network name. This name is required to establish connection between the Ericsson W20 and the wireless client(s), and to distinguish the wireless network from any other(s) that may be in use nearby. Only devices configured with the same network name as the one set on the Ericsson W20 can obtain access to it.

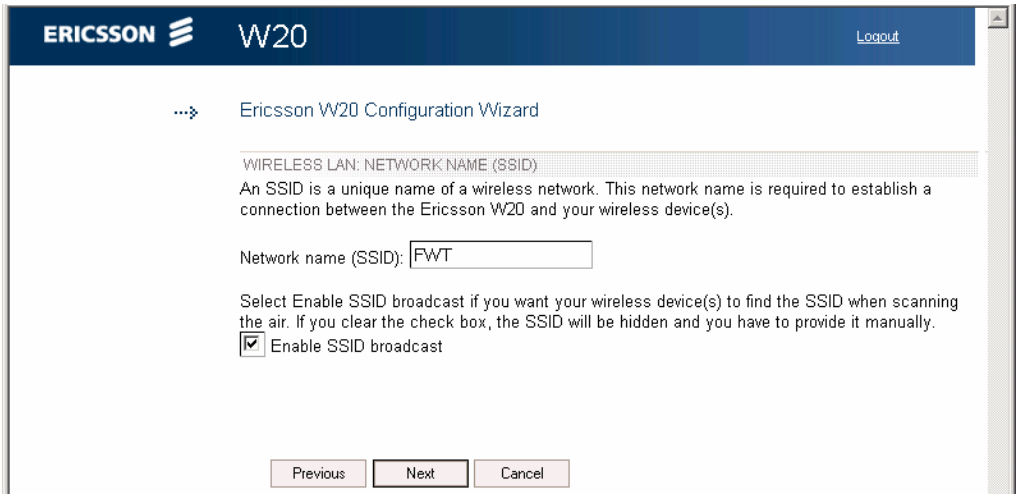
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: NETWORK NAME (SSID)
An SSID is a unique name of a wireless network. This network name is required to establish a connection between the Ericsson W20 and your wireless device(s).
Network name (SSID):
FWT
Select Enable SSID broadcast if you want your wireless device(s) to find the SSID when scanning the air. If you clear the check box, the SSID will be hidden and you have to provide it manually.
Enable SSID broadcast
Previous
Next
Cancel

Figure 14 Wireless LAN: Network Name (SSID) page

The default network name can be changed to any combination of numbers (0 – 9), letters (a – z), and hyphens (-) with a maximum length of 127 characters. Type the new name in the **Network name (SSID)** field on the **Wireless LAN: Network Name (SSID)** page.

If the SSID broadcast option is enabled, your local wireless device(s) will find the network name when scanning the air. If the option is disabled, the network name is hidden and has to be manually provided to the wireless device(s). To disable network name broadcast, clear the **Enable SSID broadcast** check box on the **Wireless LAN: Network Name (SSID)** page.

Click **Next** to proceed.

Authentication

The wireless data transmissions can be protected from potential intruders and eavesdroppers through standard authentication and encryption methods. Authentication is used to restrict access to the wireless network. Encryption is the translation of data into a form that cannot be easily understood by unauthorized users. The encrypted data can only be sent and received by users with access to a private encryption key.

WEP (Wired Equivalent Privacy) is considered to be a low security option. WEP encrypted data is translated into blocks of either 64 bits length or 128 bits length.

WPA (Wi-Fi Protected Access) and its successor WPA2 are the most reliable security options. WPA encryption uses the Temporal Key Integrity Protocol (TKIP) while WPA2 encryption follows the Advanced Encryption Standard (AES). AES offers a higher level of security and is approved for sensitive corporate and government data transmission.

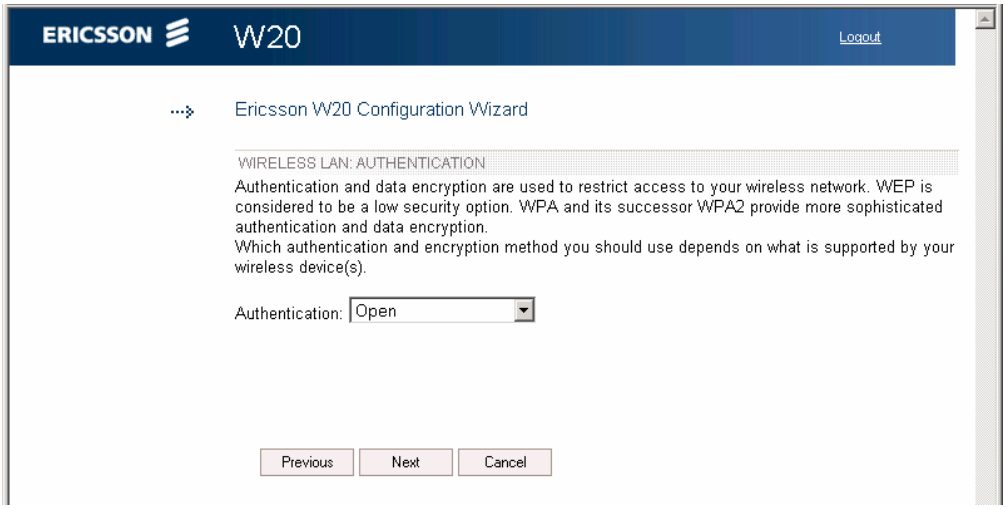
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: AUTHENTICATION
Authentication and data encryption are used to restrict access to your wireless network. WEP is considered to be a low security option. WPA and its successor WPA2 provide more sophisticated authentication and data encryption.
Which authentication and encryption method you should use depends on what is supported by your wireless device(s).
Authentication: Open
Previous
Next
Cancel

Figure 15 Wireless LAN: Authentication page

Note: Make sure that the operating system(s) and wireless LAN interface(s) of the wireless client(s) support the selected authentication method.

Select one of the authentication methods from the **Authentication** list on the **Wireless LAN: Authentication** page. Click **Next** to proceed.

If you select **Open**, the last page of the wizard, where you can review and confirm your settings, is displayed. Check the information on this page and click **Finish** to confirm the settings.

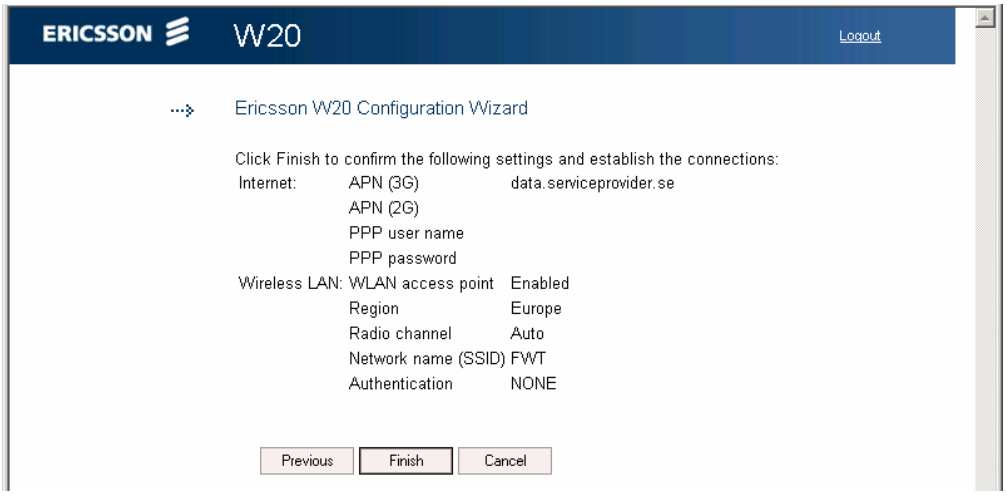

Figure 16 Confirm page

If you select **WEP (64 bit)**, the **Wireless LAN: WEP (64 BIT)** page is displayed:

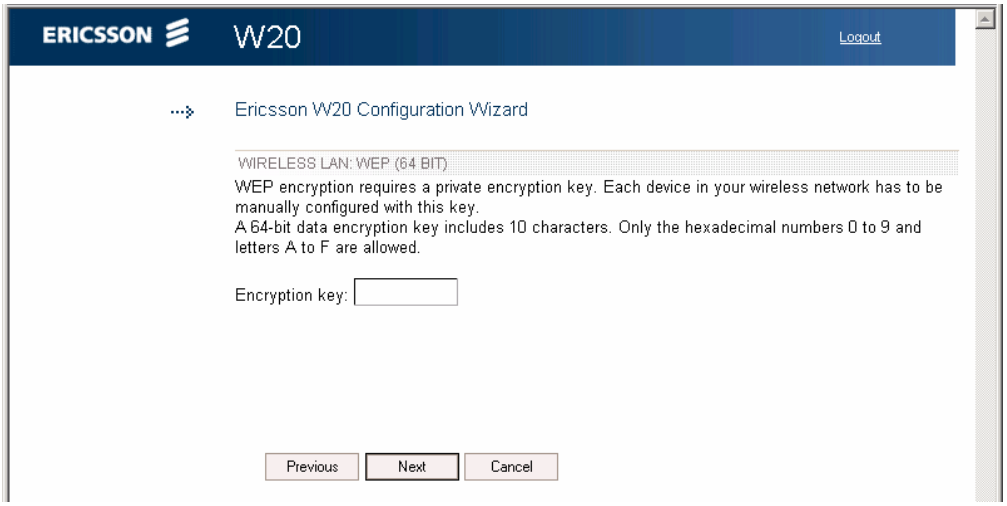
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: WEP (64 BIT)
WEP encryption requires a private encryption key. Each device in your wireless network has to be manually configured with this key.
A 64-bit data encryption key includes 10 characters. Only the hexadecimal numbers 0 to 9 and letters A to F are allowed.
Encryption key:
Previous
Next
Cancel

Figure 17 Wireless LAN: WEP (64 BIT) page

If you select **WEP (128 bit)**, the **Wireless LAN: WEP (128 BIT)** page is displayed:

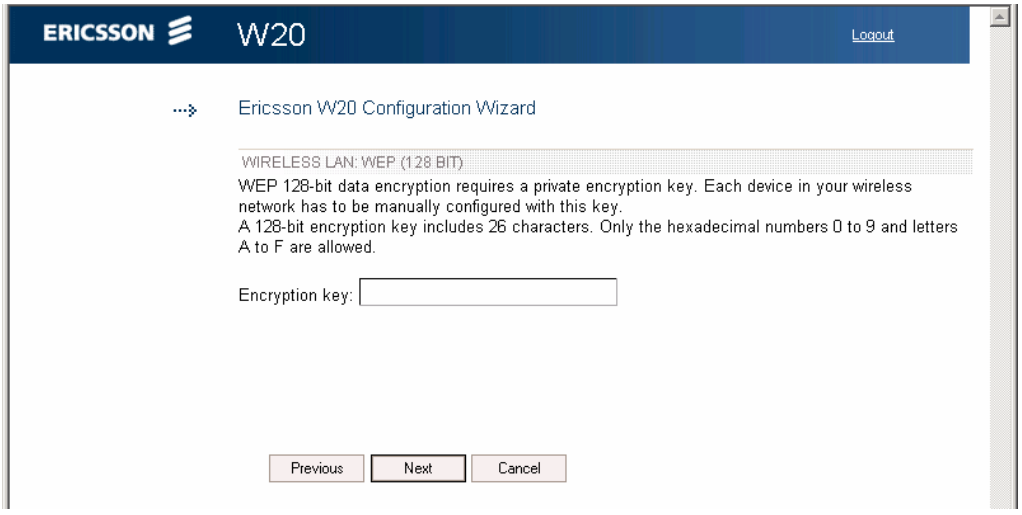
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: WEP (128 BIT)
WEP 128-bit data encryption requires a private encryption key. Each device in your wireless network has to be manually configured with this key.
A 128-bit encryption key includes 26 characters. Only the hexadecimal numbers 0 to 9 and letters A to F are allowed.
Encryption key:
Previous
Next
Cancel

Figure 18 Wireless LAN: WEP (128 BIT) page

If you select **WPA**, the **Wireless LAN: WPA** page is displayed:

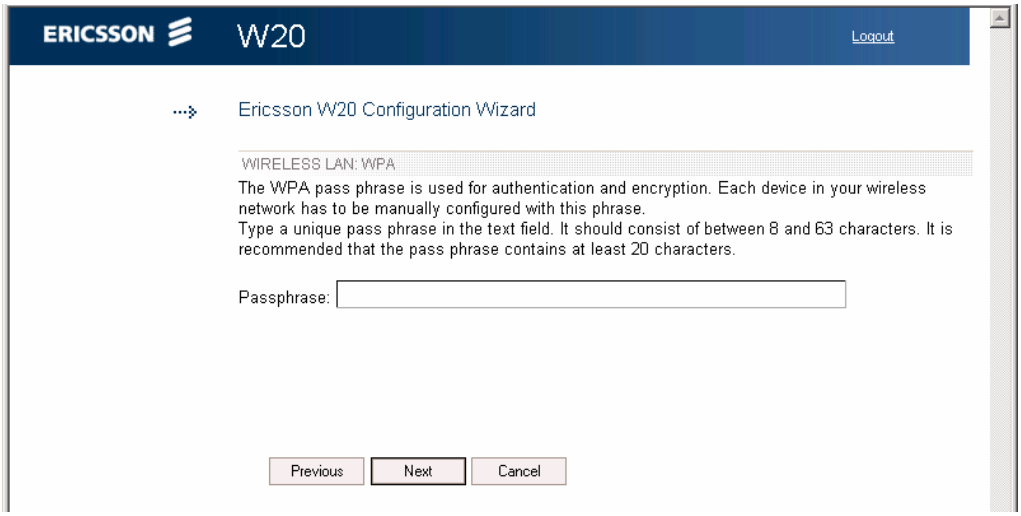
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: WPA
The WPA pass phrase is used for authentication and encryption. Each device in your wireless network has to be manually configured with this phrase.
Type a unique pass phrase in the text field. It should consist of between 8 and 63 characters. It is recommended that the pass phrase contains at least 20 characters.
Passphrase:
Previous
Next
Cancel

Figure 19 Wireless LAN: WPA page

If you select **WPA2**, the **Wireless LAN: WPA2** is displayed:

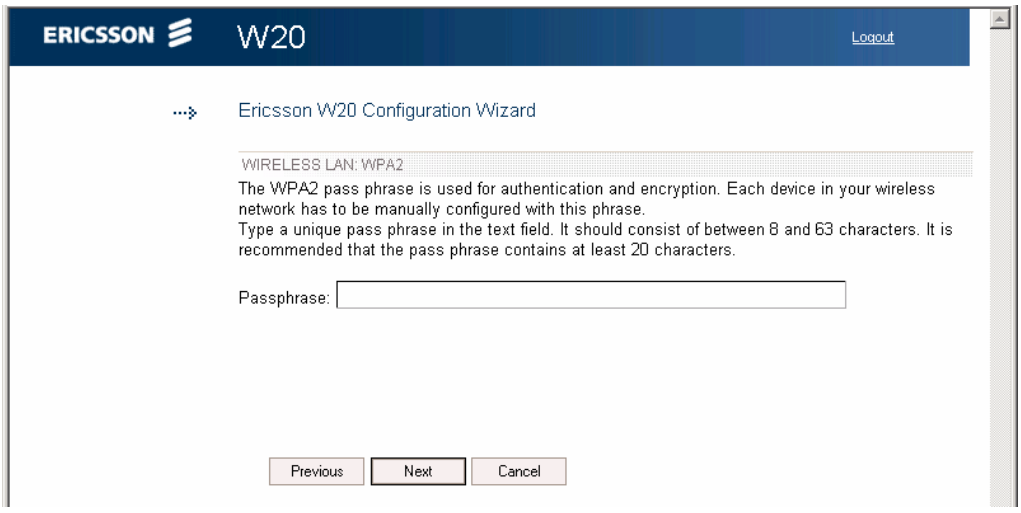
ERICSSON
W20
Logout
Ericsson W20 Configuration Wizard
WIRELESS LAN: WPA2
The WPA2 pass phrase is used for authentication and encryption. Each device in your wireless network has to be manually configured with this phrase.
Type a unique pass phrase in the text field. It should consist of between 8 and 63 characters. It is recommended that the pass phrase contains at least 20 characters.
Passphrase:
Previous
Next
Cancel

Figure 20 Wireless LAN: WPA2 page

WEP Encryption Key

The WEP encrypted data can only be sent and received by users with access to a private encryption key. This means that each device on your wireless network has to be configured with the same key as the Ericsson W20 in order to allow encrypted data transmissions.

A 64-bit data encryption key includes 10 characters. A 128-bit data encryption key includes 26 characters. Only the hexadecimal numbers 0 to 9 and letters A to F are allowed.

Fill in the **Encryption key** field on the **Wireless LAN: WEP (64 BIT)** page or the **Wireless LAN: WEP (128 BIT)** page. Click **Next** to proceed.

WPA/WPA2 Pass Phrase

WPA and WPA2 authentication and encryption require a pass phrase. Each device on your wireless network has to be configured with the same pass phrase as the Ericsson W20. The encryption master key is derived from the pass phrase and the network name (SSID) of the device.

On the **Wireless LAN: WPA** or **Wireless LAN: WPA2** page, type a unique pass phrase in the **Passphrase** field. A WPA or WPA2 pass phrase is case sensitive and consists of between 8 and 63 optional characters. It is recommended that the pass phrase contains at least 20 characters. Click **Next** to proceed.

Confirming Settings

On the last page of the Configuration Wizard, the Internet and Wireless LAN settings are displayed:

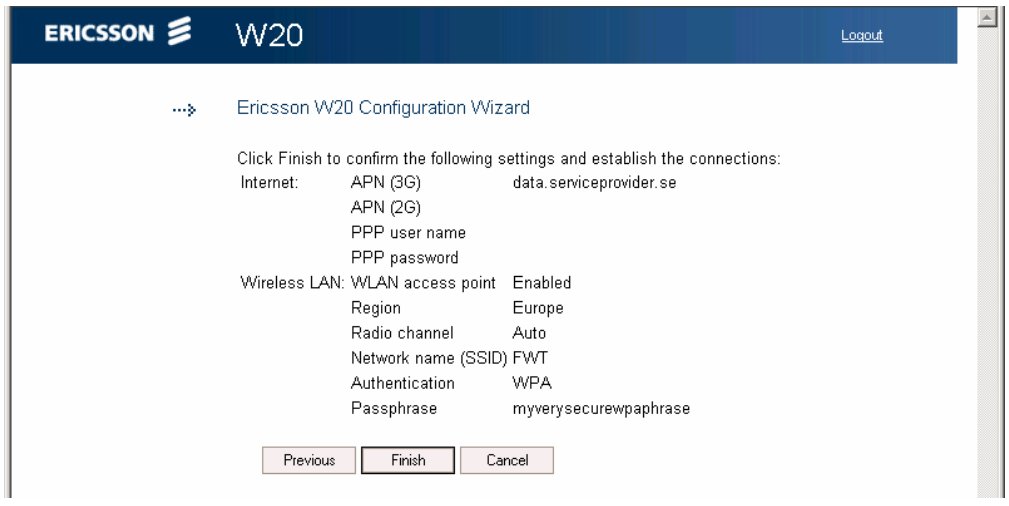

Figure 21 Confirm page

Check the information on this page and click **Finish** to confirm the settings.

2.4 Internet

The Ericsson W20 connects to the Internet through mobile (radio) communication using the UMTS (3G) network. If the UMTS network is not available, the GSM (2G) network is used as fall-back. Connection details are displayed on the **Internet** page:

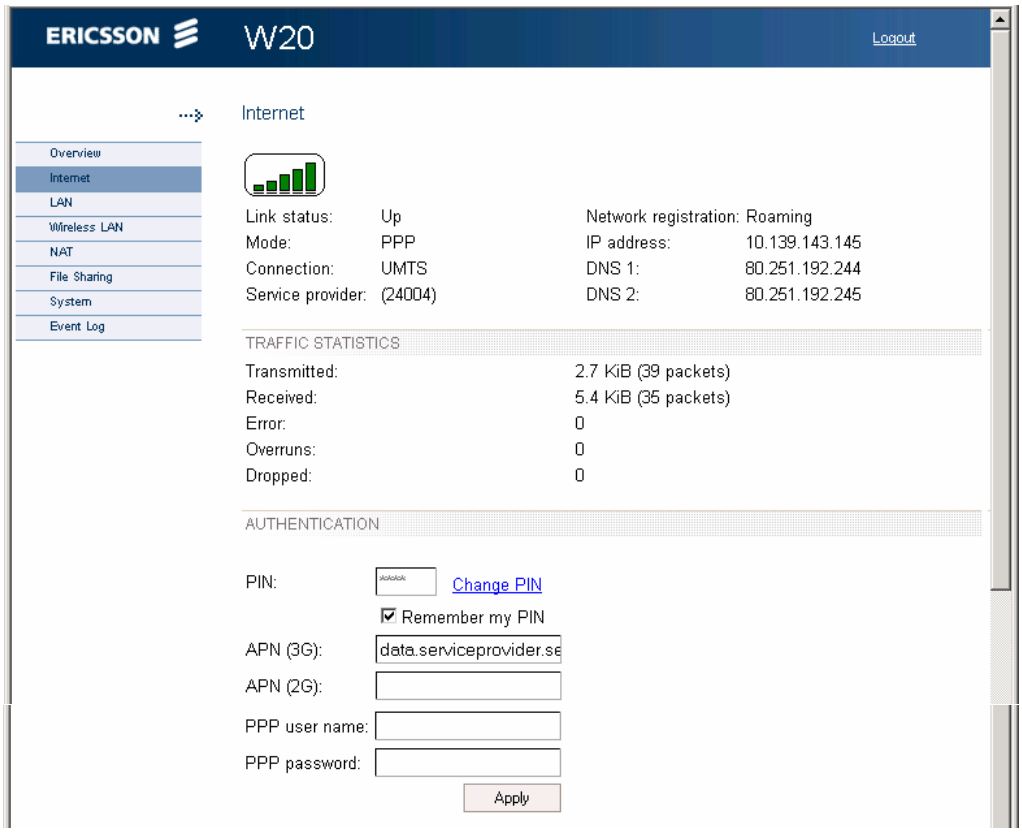

Figure 22 Internet page

The following information is displayed on the **Internet** page:

The mobile network (UMTS or GSM) signal quality available at the Ericsson W20 location. This signal quality affects the performance of the unit. If two or more bars are displayed, the connection is usually acceptable.

Link Status	The Internet access status, either `Up` or `Down` If the link is up, connection is established.
Mode	The protocol used for the Internet data traffic: `PPP` (Point-to-Point Protocol)

Connection	The radio access technique currently used to enable Internet access. It can be either
	`HSDPA`
	`UMTS` or
	`GPRS`

Service provider	The name of the mobile network operator.

Network registration	The current mobile network registration mode, which can be one of the following:
	`Not registered, not searching`
	`Registered, home network`
	`Searching`
	`Registration denied`
	`Unknown`
	`Roaming`

IP Address	The IP address automatically assigned to the Ericsson W20 by the mobile network.
DNS 1	The IP address to the DNS server.
DNS 2	The IP address to the secondary DNS server.

2.4.1 Traffic Statistics

The **Traffic Statistics** section includes information about the following items:

Transmitted	The total size (and number) of transmitted data packets.
Received	The total size (and number) of received data packets.
Error	The number of invalid data packets.
Overruns	The number of packets lost due to too many incoming data packets.
Dropped	The number of dropped data packets.

Note: The data size and packet counters have the upper limits of 4 GiB and 2^{32} packets (more than 4 billion packets). When these limits have been reached, the counters wrap around to zero.

2.4.2 Authentication

Internet access requires authentication of the Ericsson W20. Depending on the current Internet service setup, the authentication requests may differ. Your service provider provides the Ericsson W20 SIM card and details needed for authentication.

The following authentication details may be required:

PIN	The Personal Identification Number, which is used for SIM authentication.
Remember my PIN	If enabled, SIM authentication is automatic and you will not have to enter the PIN in case of a system restart.
APN (3G)	The 3G Access Point Name, which is a reference to the UMTS Internet access point on the service provider's network. The APN usually has the format <name.service_provider.country>.
APN (2G)	The 2G Access Point Name, which is a reference to the GPRS/EDGE Internet access point on the service provider's network. The APN usually has the format <name.service_provider.country>.
PPP user name	The Point-to-Point Protocol Internet mode user name, which is used for user authentication.
PPP password	The Point-to-Point Protocol Internet mode password, which is used for user authentication.

If you have not used the Configuration Wizard for configuration of Internet access, or authentication is required because of a reset to factory default configuration, fill in the **PIN**, **APN (2G)**, **APN (3G)**, **PPP user name**, and **PPP password** fields. For automatic SIM authentication in case of a system restart, select the **Remember my PIN** check box. Click **Apply**.

Note: Only enter details that you have received from your service provider and leave other fields empty. If the `PIN is locked` message is displayed, no PIN is required.

Unblocking SIM Card

If three attempts have been made with the wrong PIN, the SIM card is blocked. The PUK is required to unblock the card. Click the Unblock SIM link that will be displayed beside the **PIN** field. The **Unblock SIM** page is displayed:

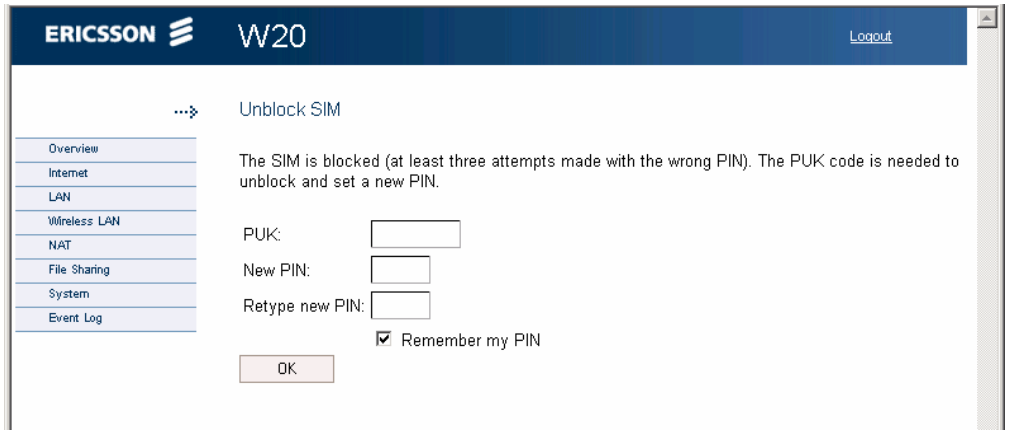

Figure 23 Unblock SIM page

Type the PUK in the **PUK** field and type a new PIN in the **New PIN** and **Retype new PIN** fields. Click **OK**.

Note: If ten attempts have been made with the wrong PUK, the SIM card is permanently blocked. A new SIM card is required.

Changing Authentication Details

If SIM authentication is verified, you cannot edit the **PIN** field. To change PIN, click Change PIN. The **Change PIN** page is displayed:

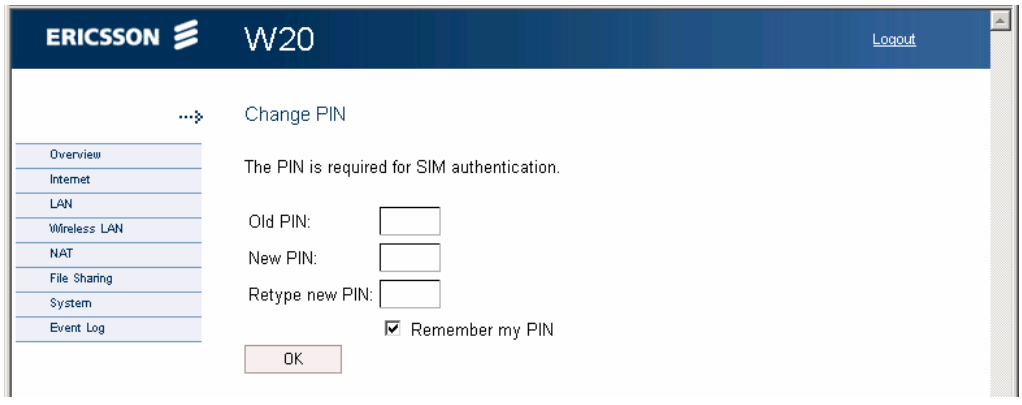

Figure 24 Change PIN page

Type the current and new PIN in the corresponding fields and click **OK**.

If you want to change the APN, PPP user name, or PPP password, type the new value in the corresponding field on the **Internet** page and click **Apply**.

2.5 LAN

The LAN (Local Area Network) configuration includes the details of the connections between the Ericsson W20 and other local devices.

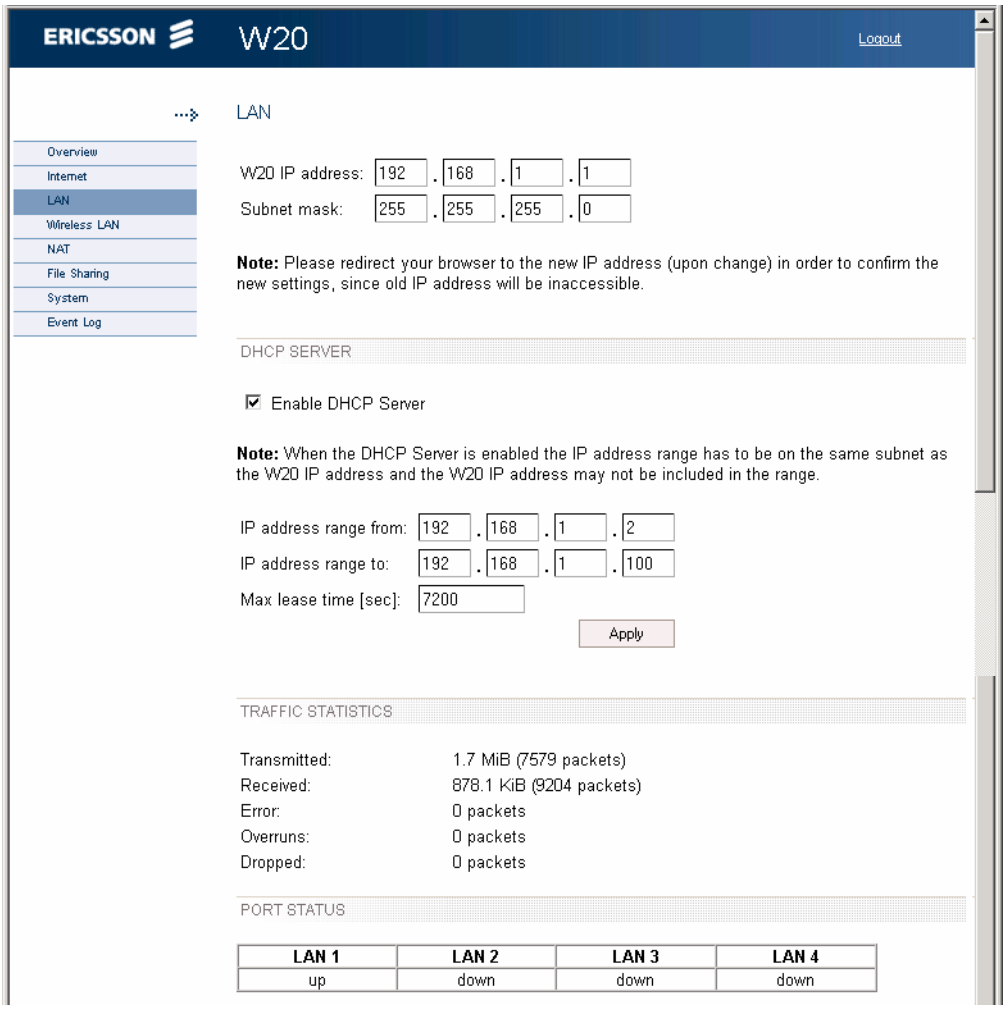
ERICSSON
W20
Logout
LAN
Overview
Internet
LAN
Wireless LAN
NAT
File Sharing
System
Event Log
W20 IP address: 192 . 168 . 1 . 1
Subnet mask: 255 . 255 . 255 . 0
Note: Please redirect your browser to the new IP address (upon change) in order to confirm the new settings, since old IP address will be inaccessible.
DHCP SERVER
Enable DHCP Server
Note: When the DHCP Server is enabled the IP address range has to be on the same subnet as the W20 IP address and the W20 IP address may not be included in the range.
IP address range from: 192 . 168 . 1 . 2
IP address range to: 192 . 168 . 1 . 100
Max lease time [sec]: 7200
Apply
TRAFFIC STATISTICS
Transmitted: 1.7 MiB (7579 packets)
Received: 878.1 KiB (9204 packets)
Error: 0 packets
Overruns: 0 packets
Dropped: 0 packets
PORT STATUS
LAN 1 LAN 2 LAN 3 LAN 4
up down down down

Figure 25 LAN page

The following information and configuration options are displayed on top of the **LAN** page:

W20 IP address	The LAN address of the Ericsson W20.
Subnet mask	The subnet mask, which determines the range of IP addresses on the subnet.

If you want to change the W20 IP address, make sure that the new address is not included in the DHCP server IP address range, displayed in the **DHCP Server** section. The default range is 192.168.1.2 – 192.168.1.100.

Before you change the W20 IP address or subnet mask you also have to make sure that the DHCP server IP address range is included in the new subnet. If you want to change the subnet not to include the DHCP IP address range, you first have to disable the DHCP server.

To change the W20 IP address or subnet mask, type the new value in the corresponding field and click **Apply** to save the settings.

Note: If you change the LAN IP address while connected to the Ericsson W20 web pages through a web browser, you will be disconnected. You have to redirect the web browser to the new address in order to confirm the new settings. Type the new LAN IP address in the **Address** (URL) field and press the ↵key.

2.5.1 DHCP Server

The Ericsson W20 incorporates a DHCP (Dynamic Host Configuration Protocol) server that assigns dynamic IP addresses to local clients. The IP addresses are collected from a predefined range of available addresses. The default address range is suitable for most local networks.

The DHCP server uses the concept of a "lease", that is the amount of time that a given IP address will be valid for a specific device. If the lease time expires and the device is still connected, the lease is automatically renewed.

The following configuration options are displayed in the **DHCP server** section on the **LAN** page:

Enable DHCP server	If this check box is selected the DHCP server is working, otherwise it is turned off.
IP address range from	The first IP address in a range of IP addresses that can be assigned to the LAN clients.

IP address range to	The last IP address in a range of IP addresses that can be assigned to the LAN clients.
Max Lease Time [sec]	The IP address lease time, specified in seconds: min: `60` max: `2147483647`

To disable the DHCP server, clear the **Enable DHCP server** check box.

If you for some reason want to configure your connected devices with static addresses, make sure that the addresses are outside the DHCP server IP address range.

To change the range of available addresses, change the IP addresses in the **IP address range from** and **IP address range to** fields.

Note: The DHCP server IP address range has to be on the same subnet as the Ericsson W20 LAN IP address. The IP address range must not include the Ericsson W20 IP address.

In the **Maximum lease time [sec]** field, enter the time (in seconds) you want the LAN device to lease the IP address before it is reassigned.

Click **Apply** to save the settings.

2.5.2 Traffic Statistics

The following information is displayed in the **Traffic Statistics** section on the **LAN** page:

Transmitted	The total size (and number) of transmitted data packets on the LAN.
Received	The total size (and number) of received data packets on the LAN.
Error	The number of invalid data packets.
Overruns	The number of packet loss due to too many incoming data packets.
Dropped	The number of dropped data packets.

Note: The data size and packet counters have the upper limits of 4 GiB and 2^{32} packets (more than 4 billion packets). When these limits have been reached, the counters wrap around to zero.

2.5.3 Port Status

The **Port Status** table shows the connection(s) to the **LAN** (**1** - **4**) ports on the Ericsson W20 unit. The status for each port is `Up` or `Down`.

2.6 Wireless LAN

A Wireless LAN (WLAN) is a local network that communicates through wireless connections. The Ericsson W20 is a WLAN Access Point (AP) for the local network providing wireless client(s) with Internet and LAN access.

The WLAN settings are displayed on the **Wireless LAN** web page. To ensure the security of your wireless LAN, you are recommended to change the default settings.

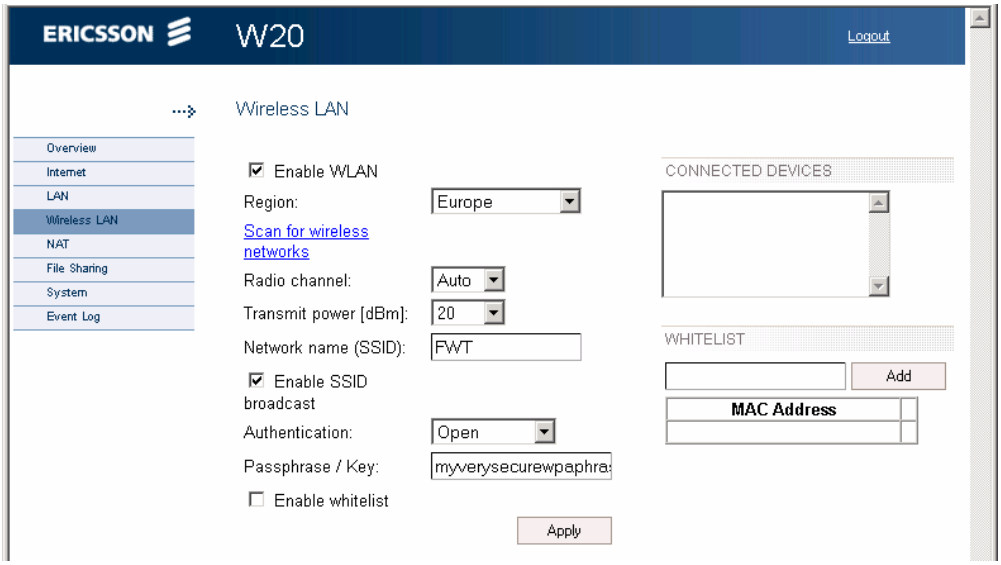

Figure 26 Wireless LAN page

To enable the Ericsson W20 AP features providing the local wireless device(s) with Internet and LAN access, select the **Enable WLAN** check box on the **Wireless LAN** page and click **Apply**.

Note: The wireless setup typically requires configuration of both the Ericsson W20 and the wireless clients. For more information on configuration of wireless clients, see section 3.2 – “Wireless LAN Settings”.

2.6.1 Radio Channels

There are 13 regulatory radio channels predefined for the transportation of data in a wireless LAN. Local regulations determine which of these channels that can be used by the Ericsson W20.

The following settings concerning radio frequencies are displayed and possible to modify on the **Wireless LAN** page:

Region	The country domain, which is one of the following:
	`Europe`
	`US`
	`Canada`
	`South Africa`
	`Australia`
	`New Zeeland`
	`Malaysia`
	`Singapore`

Radio channel	The radio channel for wireless LAN communication, either `Auto` (default) or `1-13`
Transmit power [dBm]	The radio transmission level that determines the signal range: `0-20` Default is 20.

To make sure the Ericsson W20 operates on correct radio frequencies according to local regulations, you have to state in which region you reside. After this you cannot select any radio channel which would be against the local regulations. Select your country domain from the **Region** list on the **Wireless LAN** page.

Use the **Radio channel** list to select which one of the allowed radio channels to use, or select `Auto` to let the Ericsson W20 automatically select a channel (recommended). If you want information about adjacent wireless networks to make your choice, click Scan for wireless networks. The **Scan for wireless networks** page is displayed:

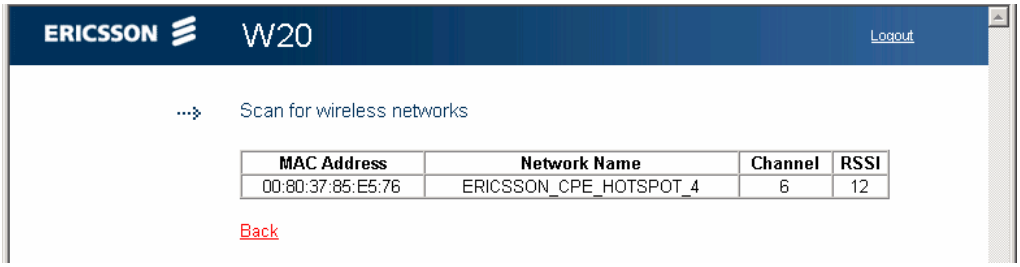

Figure 27 Scan for wireless networks page

When the scanning is finished, the following information about identified wireless networks is displayed:

MAC Address	The MAC address of the access point of the wireless network.
Network Name	The name of the wireless network.
Channel	The radio channel used by the wireless network.
RSSI	The radio signal strength.

Use this information to decide which channel to use for the Ericsson W20 wireless network. Click Back to return to the **Wireless LAN** page where you can select this channel.

To avoid interference with other wireless networks, the transmit power level can be reduced. If you want to change the transmit power level according to your specific conditions, select an appropriate level from the **Transmit power [dBm]** list.

Click **Apply** to save the settings.

2.6.2 Network Name

All devices on the local wireless network share a common Service Set IDentifier (SSID) or network name. This name is required to establish connection between the Ericsson W20 and other wireless device(s) and to distinguish the wireless network from any other(s) that may be in use nearby. It ensures that only devices configured with the same network name as the one set on the Ericsson W20 can obtain access to it.

The following settings concerning the network name are displayed and can be modified on the **Wireless LAN** page:

Network name (SSID)	The name of the wireless network.
Enable SSID broadcast	If this check box is selected the network name will be broadcasted, otherwise hidden.

The default network name can be changed to any combination of numbers (0 – 9), letters (a – z), and hyphens (-) with a maximum length of 127 characters. Type the new name in the **Network name (SSID)** field.

If the SSID broadcast option is enabled, the local wireless client(s) will find the network name when scanning the air. If the option is disabled, the name is hidden and has to be manually provided to the wireless client(s).

To disable network name broadcasting, clear the **Enable SSID broadcast** check box on the **Wireless LAN** page.

Click **Apply** to save the settings.

2.6.3 Security

The wireless data transmissions can be protected from potential intruders and eavesdroppers through standard authentication and encryption methods. Authentication is used to restrict access to the wireless network. Encryption is the translation of data into a form that cannot be easily understood by unauthorized users. The encrypted data can only be sent and received by users with access to a private encryption key.

The following authentication methods are supported by the Ericsson W20:

WEP

WEP (Wired Equivalent Privacy) is considered to be a low security option. The data is encrypted into blocks of either 64 bits length or 128 bits length. The encrypted data can only be sent and received by users with access to a private encryption key. Each device on your wireless network has to be manually configured with the same key as the Ericsson W20 in order to allow encrypted data transmissions.

WPA and WPA2

WPA (Wi-Fi Protected Access) and its successor WPA2 are considered to be the most reliable security options. WPA encryption uses the Temporal Key Integrity Protocol (TKIP) while WPA2 encryption follows the Advanced Encryption Standard (AES). AES offers a higher level of security and is approved for sensitive corporate and government data transmission.

WPA and WPA2 authentication require a pass phrase. Each device on your wireless network has to be manually configured with the same pass phrase as the Ericsson W20. The encryption master key is derived from the pass phrase and the network name (SSID) of the device.

The following wireless LAN authentication details are displayed and can be modified on the **Wireless LAN** page:

Authentication	The authentication method, which can be one of the following:
	`Open`
	`WEP (64 bit)`
	`WEP (128 bit)`
	`WPA`
	`WPA2`

Passphrase / Key	The WEP 64-bit data encryption or 128-bit data encryption key *or* the WPA or WPA2 authentication and encryption pass phrase.
Enable whitelist	If this check box is selected, only wireless devices added to the whitelist are allowed to access the Ericsson W20.

Select an authentication method from the **Authentication** list.

Note: Make sure that the operating system(s) and wireless LAN interface(s) of the wireless client(s) support the selected authentication method.

If you have selected WEP (64 bit) or WEP (128 bit), type the key for encryption in the **Passphrase / Key** field. A 64-bit data encryption key includes 10 characters. A 128-bit data encryption key includes 26 characters. Only the hexadecimal numbers 0 to 9 and letters A to F are allowed.

If you have selected WPA or WPA2, type the pass phrase for authentication and encryption in the **Passphrase / Key** field. A WPA or WPA2 pass phrase is case sensitive and consists of between 8 and 63 optional characters. For security reasons, you are recommended to use a pass phrase that contains at least 20 characters.

Click **Apply** to save the settings.

2.6.4 Connected Devices

The **Connected Devices** list includes the MAC (Media Access Control) addresses of all wireless devices currently connected to the Ericsson W20.

To find out about the MAC address of a PC using Microsoft Windows, open a command prompt and type **`ipconfig /all`**. A list of system properties is displayed. The MAC address is found on the `Physical Address` row.

2.6.5 Whitelist

The Whitelist is a list of up to 20 WLAN client MAC (Media Access Control) addresses that are allowed to access the Ericsson W20. A MAC address is the unique hardware number of a device. It has the form of xx:xx:xx:xx:xx:xx, where x is either a letter A – F or a number.

To add a client to the whitelist, copy a MAC address from the **Connected Devices** list or type the client's MAC address in the **Whitelist** field on the **Wireless LAN** page and click **Add**.

Click **Apply** to save the settings.

2.7 NAT

The Network Address Translation (NAT) service provides the LAN devices with Internet access. All communication from the LAN to the Internet appears to come from the IP address of the Ericsson W20. In this way, details about the local devices remain private and it is not possible to access a local device directly from the Internet.

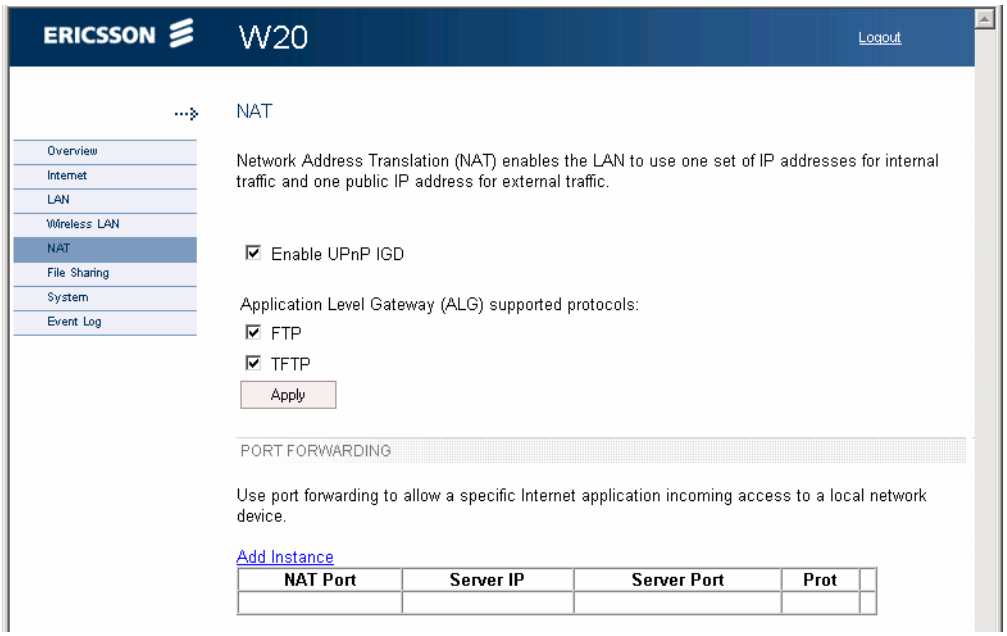

Figure 28 NAT page

2.7.1 UPnP IGD

The Ericsson W20 supports the Universal Plug and Play (UPnP) Internet Gateway Device (IGD) standard. UPnP IGD is used to provide automatic

port forwarding allowing communication between certain Internet applications and the local network. When UPnP IGD is enabled, programs like MSN Messenger® and most network enabled games are allowed to pass the NAT service.

To disable UPnP IGD, clear the **Enable UPnP IGD** check box on the **NAT** page and click **Apply**.

2.7.2 Application Level Gateways

From a security perspective, certain Internet applications, for example FTP applications that open additional ports upon transfer, are especially problematic to handle. An Application Level Gateway (ALG) provides a translation and transportation service for such a specific application. Incoming data packets are checked against existing NAT and packet filtering rules, IP addresses are evaluated and a detailed packet analysis is performed. If necessary, the contents of a packet are modified and if a secondary port is required, the ALG will open one. The Ericsson W20 includes ALG support for the following applications:

Table 3 ALG Supported Applications

Application	**Protocol**	**Port number**
File Transfer Protocol (FTP)	TCP	21
Trivial File Transfer Protocol (TFTP)	UDP	69

The ALG for each application does not require additional configuration. The supported ALGs can be enabled and disabled individually. To disable an ALG, clear the corresponding check box on the **NAT** page and click **Apply**.

2.7.3 Port Forwarding

Port forwarding is used to allow incoming access to a specific local network device, for example an internal web server.

Note: Port forwarding requires a public IP address of the Ericsson W20. The Ericsson W20 IP address is displayed on the **Internet** page. A private IP address usually begins with `10`, `172`, or `192`. In this case, no incoming access from the Internet is allowed. For more information on public and private IP addresses, contact your service provider.

Adding an Instance

To add a new port forwarding instance, click Add instance in the **Port Forwarding** section on the **NAT** page. The **Add Portforwarding Instance** page is displayed:

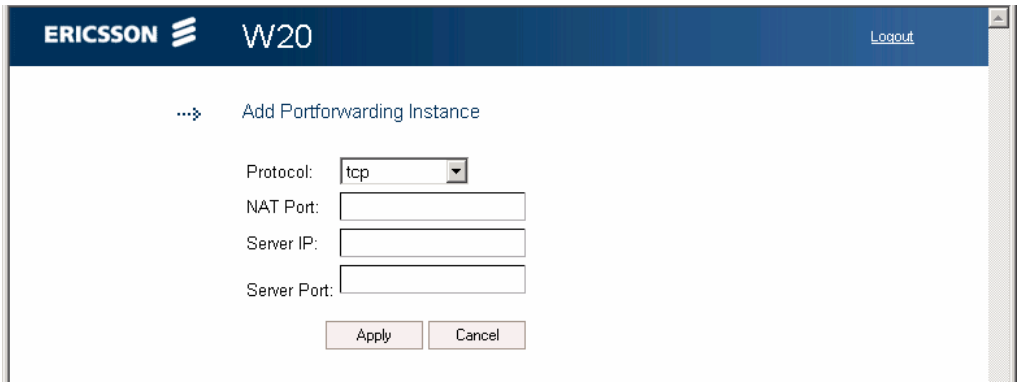

Figure 29 Add Portforwarding Instance page

Fill in the **Protocol**, **NAT Port**, **Server IP**, and **Server Port** fields and click **Apply**.

Example

In the following example, port forwarding is used to allow incoming access to an internal web server.

Protocol: `TCP`

NAT Port: `80`

Server IP: `192.168.1.101`

Server Port: `8080`

When one or more port forwarding instances are added, the following details are displayed for each instance in the **Port Forwarding** table on the **NAT** page:

NAT Port	The NAT port number that the data traffic is allowed to be transported on.
Server IP	The IP address of the destination unit.

Server Port	The destination port, which identifies the type of service that is directed, for example web service on port 8080.
Prot	The data traffic protocol; `UDP` or `TCP`.

Editing an Instance

To edit a port forwarding instance, click the corresponding Edit link in the **Port Forwarding** section on the **NAT** page. **The Edit Portforwarding Instance** page is displayed.

Change one or more value(s) in the **Protocol**, **NAT Port**, **Server IP**, or **Server Port** field(s) and click **Apply**.

2.8 File Sharing

The Ericsson W20 supports local network storage. It is possible to connect up to two USB mass storage devices at the same time.

The included files are shared with all devices on the LAN. All local users have full access to the shared files.

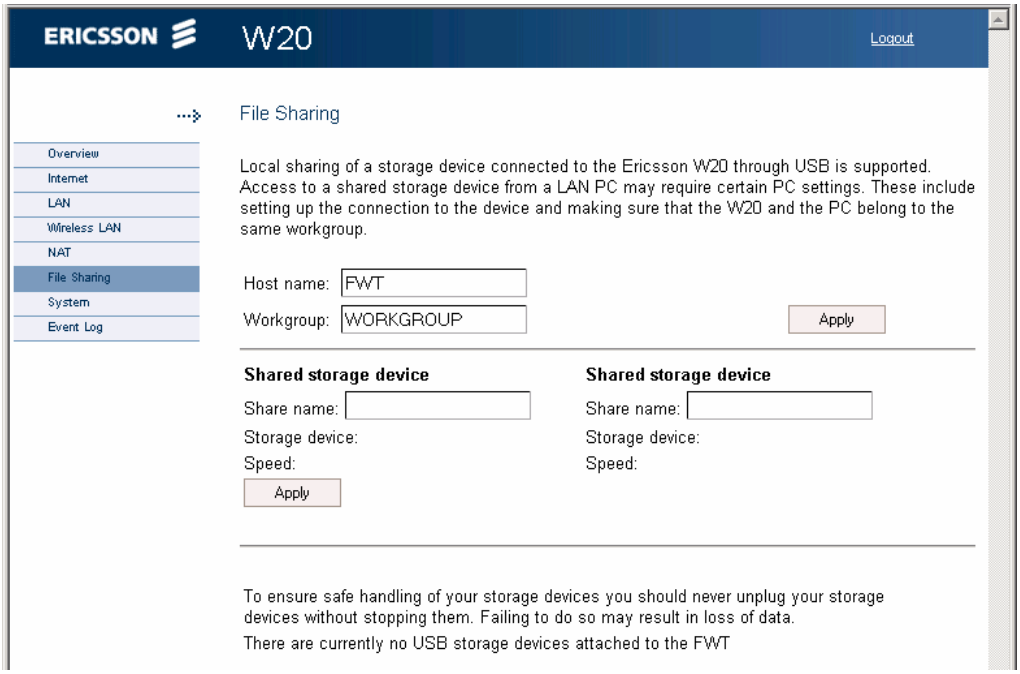
ERICSSON
W20
Logout
File Sharing
Overview
Internet
LAN
Wireless LAN
NAT
File Sharing
System
Event Log
Local sharing of a storage device connected to the Ericsson W20 through USB is supported. Access to a shared storage device from a LAN PC may require certain PC settings. These include setting up the connection to the device and making sure that the W20 and the PC belong to the same workgroup.
Host name: FWT
Workgroup: WORKGROUP
Apply
Shared storage device
Share name:
Storage device:
Speed:
Apply
Shared storage device
Share name:
Storage device:
Speed:
To ensure safe handling of your storage devices you should never unplug your storage devices without stopping them. Failing to do so may result in loss of data.
There are currently no USB storage devices attached to the FWT

Figure 30 File Sharing page

Note: If the mass storage device contains more than one partition, only the first partition is shared.

To access a shared file from a PC on your LAN, you may need the following information, displayed on the **File Sharing** page.

Host name	The name of the Ericsson W20 on the local network.
Workgroup	The common name of all devices sharing the same resources on the local network.

To change the host name or workgroup, type the new name in the corresponding field and click **Apply**.

For information about setting up connections from a PC to shared files, see section 3.3 – “File Sharing Settings”.

When a storage device is connected to Ericsson W20, information about the device is displayed on the **File Sharing** page. If this page is open when you connect the device, a refresh of the page is required for the new information to be displayed:

Share name	The name of the shared resource on your local network.
Storage device	The manufacturer name of the device.

Speed	The speed of the data transmissions between the storage device and the Ericsson W20:
	`High Speed (480 Mbit/s),`
	`Full Speed (12 Mbit/s)` or
	`Low Speed (1,5 Mbit/s)`

To give a file sharing device a specific name, type this name in the corresponding **Share name** field and click **Apply**.

Before a USB device is disconnected from the Ericsson W20, it has to be released. This ensures that no ongoing or remaining operations are interrupted, which could result in loss of data.

To release a USB storage device from the Ericsson W20, click **Stop** on the **File Sharing** page. As soon as it is safe to disconnect the mass storage device from the Ericsson W20, information about this is displayed on a new page.

2.9 System

The **System** page includes system information and management functions, used to update and restore the Ericsson W20.

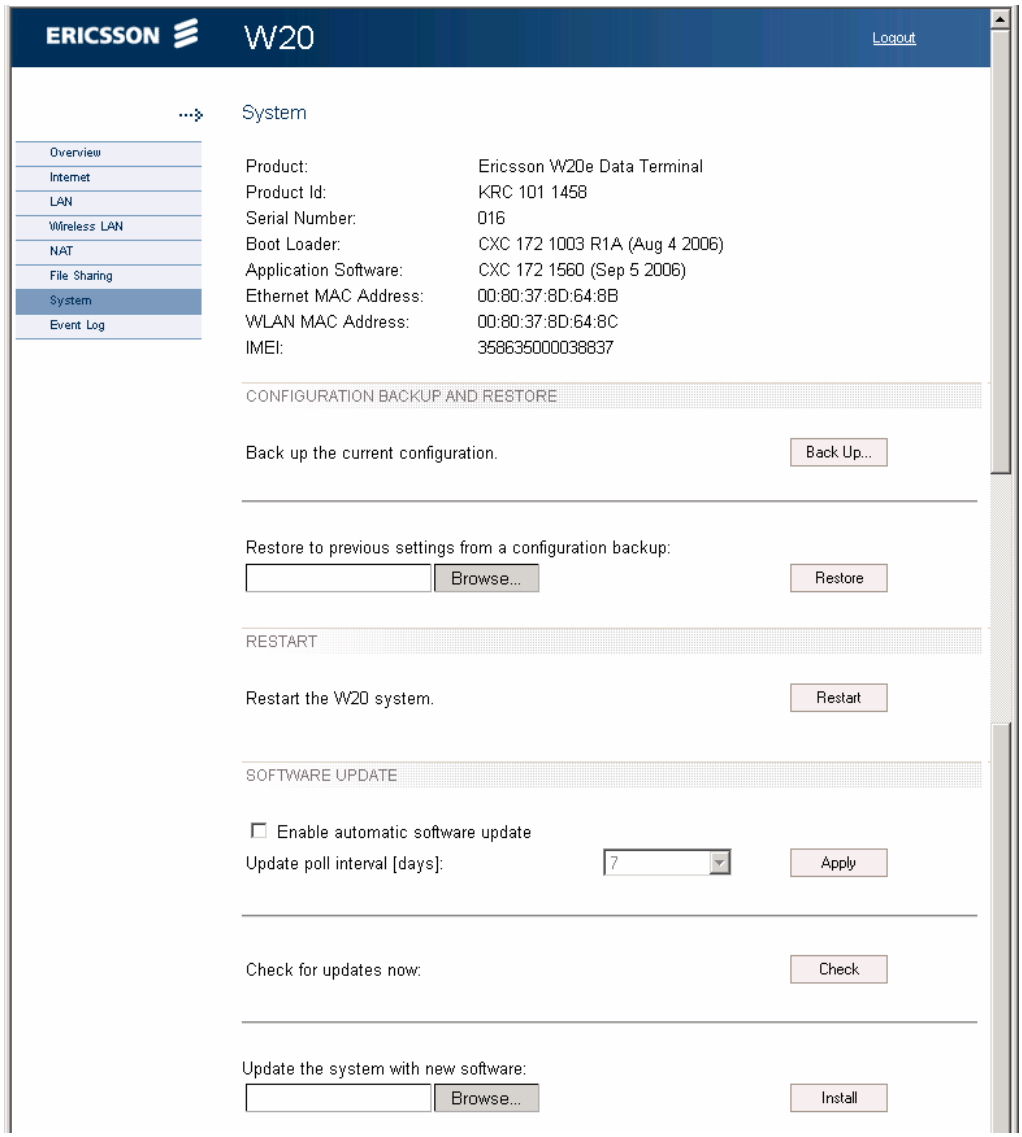

Figure 31 System page

2.9.1 Configuration Backup and Restore

The Ericsson W20 configuration can be restored to factory default settings, or to any previous configuration locally stored in a backup file.

Backing Up a Configuration

It is possible to back up a configuration that you want to save for future purposes.

To back up a configuration, click **Back Up…** in the **Configuration Backup and Restore** section on the **System** page. Follow the instructions on the screen to select a location for the configuration file.

Note: Do not modify a configuration file. If you do, the file will be invalid and not accepted if you want to make a restore.

Restoring a Configuration

If you wish to revert to previous settings, you can perform a configuration restore from a previously stored backup file.

Note: Do not modify a configuration file. If you do, the file will be invalid and not accepted if you want to make a restore.

To restore from a configuration file, click **Browse…** in the **Configuration Backup and Restore** section on the **System** page. Follow the instructions on the screen to locate the configuration file. The selected file will be displayed in the text field to the left of the **Browse…** button.

Click **Restore** to restore the configuration from the backup file. A confirmation message is displayed.

2.9.2 Restart

To restart the Ericsson W20, click **Restart** in the **Restart** section on the **System** page. The Ericsson W20 is restarted. The restart does not result in any configuration changes.

2.9.3 Software Update

New Ericsson W20 software versions can be either automatically or manually installed.

Automatic Software Installation

Automatic software update is supported through remote management. Your service provider regularly updates the Ericsson W20 with the most recent software version. To enable automatic software update, select the **Enable automatic software update** check box and choose an appropriate interval from the **Update poll interval [days]** list. Click **Apply** to save the settings.

Installing new Software from File

If your service provider provides a new software version for your Ericsson W20, you are recommended to upgrade the Ericsson W20.

To check for new software versions, click **Check** in the **Software Update** section on the **System** page. The following page is displayed:

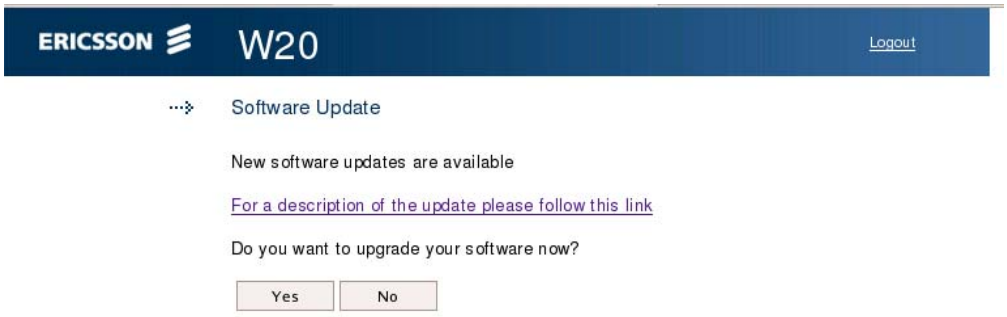

Figure 32 Results from a check for software updates page

Click For a description of the update please follow this link to get information about the software version or click **Yes** to install the new version. If you click **Yes** the update is initiated and the following page is displayed:

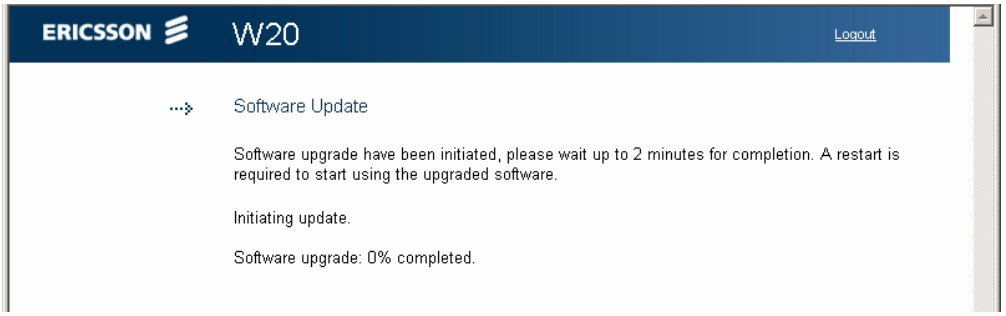
ERICSSON
W20
Logout
Software Update
Software upgrade have been initiated, please wait up to 2 minutes for completion. A restart is required to start using the upgraded software.
Initiating update.
Software upgrade: 0% completed.

Figure 33 Software Update initiated page

The information on this page is updated every tenth second. When the upgrade is finished, the following page is displayed:

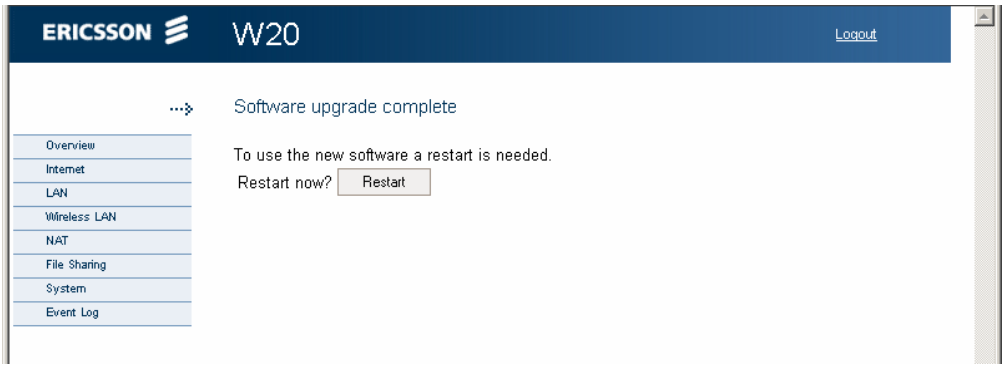

Figure 34 Software Update complete page

Click **Restart** to restart the Ericsson W20.

To install new software from a local file, make sure that the new software file is available on your PC. Then click **Browse...** in the **Software Update** section. Follow the instructions on the screen to locate the configuration file. The selected file will be displayed in the **Update the system with new software** field.

Click **Upgrade** to upgrade the Ericsson W20 with the new software version. The **Software Update initiated** and **Software Update complete** pages are displayed. See the information and Figures 33 and 34 above.

2.10 Event Log

On the **Event Log** page, a list of the Ericsson W20 logs is displayed:

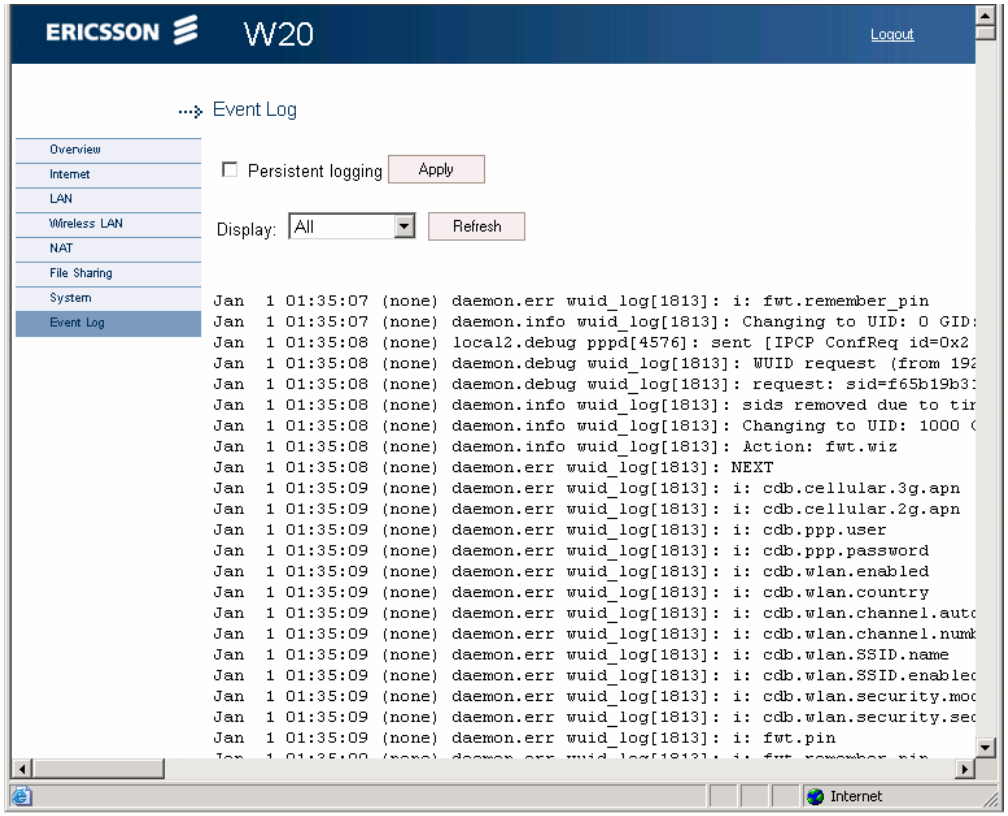
ERICSSON
W20
Logout
Event Log
Overview
Internet
LAN
Wireless LAN
NAT
File Sharing
System
Event Log
Persistent logging
Apply
Display:
All
Refresh
Jan 1 01:35:07 (none) daemon.err wuid_log[1813]: i: fwt.remember_pin
Jan 1 01:35:07 (none) daemon.info wuid_log[1813]: Changing to UID: 0 GID:
Jan 1 01:35:08 (none) local2.debug pppd[4576]: sent [IPCP ConfReq id=0x2
Jan 1 01:35:08 (none) daemon.debug wuid_log[1813]: WUID request (from 192
Jan 1 01:35:08 (none) daemon.debug wuid_log[1813]: request: sid=f65b19b3:
Jan 1 01:35:08 (none) daemon.info wuid_log[1813]: sids removed due to tir
Jan 1 01:35:08 (none) daemon.info wuid_log[1813]: Changing to UID: 1000 (
Jan 1 01:35:08 (none) daemon.info wuid_log[1813]: Action: fwt.wiz
Jan 1 01:35:08 (none) daemon.err wuid_log[1813]: NEXT
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.cellular.3g.apn
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.cellular.2g.apn
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.ppp.user
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.ppp.password
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.enabled
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.country
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.channel.auto
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.channel.numb
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.SSID.name
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.SSID.enable
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.security.mod
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: cdb.wlan.security.sec
Jan 1 01:35:09 (none) daemon.err wuid_log[1813]: i: fwt.pin
Internet

Figure 35 Event Log page

Each row in the log list displays the time and date when an alarm occurred, the type of alarm, and a brief statement indicating its cause.

If persistent logging is enabled, the logs will remain after a system restart. To enable this feature, select the **Persistent logging** check box on the **Event Log** page and click **Apply**.

To view only a selection of the logs in the list, select a filter level from the **Display** list. Available log levels are **Alarm** and **All**. The **Alarm** log level corresponds with the **Alarm** indicator on the Ericsson W20 unit and the information in the **Alarms** section on the **Overview** page.

Click **Refresh** to update the list with new information. The most recent logs are listed at the bottom of the list.

3 PC Configuration

The connection to the Ericsson W20 may require specific PC configuration. This chapter includes instructions on how to configure Internet Protocol (IP) settings, establish wireless connection(s) with the Ericsson W20 and access a shared network storage device. The descriptions include examples from Windows XP and 2000. If you use another operating system, refer to the system documentation or online help.

3.1 IP Settings

The Ericsson W20 automatically assigns the IP settings to your PC(s). You only need to configure the PC(s) according to the instructions below to accept the information. In some cases however, you may want to configure IP settings manually. See section 3.1.2 – “Configuring Static IP Address”.

If you have connected your LAN PC(s) to the Ericsson W20, follow the instructions that correspond to the operating system installed on your PC in the following sub-sections.

If you want to allow wireless PCs to access your device, you also have to follow the instructions in section 3.2 – “Wireless LAN Settings”.

3.1.1 Obtaining IP Settings Automatically

Follow the instructions that correspond to the operating system installed on your PC.

Windows XP

1 In the Windows task bar, click the **Start** button, and then click **Control Panel**. The **Control Panel** window is displayed.

2 If you are using Category View, Click **Network and Internet Connections** and then **Network Connections**. If you are using Classic View, double-click **Network Connections**. The **Network Connections** window is displayed.

3 Double-click the icon corresponding to your network interface card (NIC). This icon is usually labeled **Local Area Connection**. The **Local Area Connection Properties** window is displayed with a list of currently installed network items.

4 Select **Internet Protocol TCP/IP** and ensure that the check box beside the text is selected. Click **Properties**.

5 In the **Internet Protocol (TCP/IP) Properties** window, select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

6 Click **OK** twice to confirm your changes and close the windows, and then close the **Control Panel** window.

Windows 2000

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.

2. Double-click the **Network and Dial-up Connections** icon.

3. In the **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then click **Properties**.
   The **Local Area Connection Properties** dialog box is displayed with a list of currently installed network components. If the list includes **Internet Protocol (TCP/IP)**, then the protocol has already been enabled. Skip to step 11.

4. If **Internet Protocol (TCP/IP)** does not display as an installed component, click **Install…**.

5. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add…**.

6. Select **Internet Protocol (TCP/IP)** in the **Network Protocols** list, and then click **OK**.
   You may be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.

7. If prompted, click **OK** to restart your computer with the new settings.

Next, configure the PCs to accept IP information assigned by the Ericsson W20:

8. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.

9. Double-click the **Network and Dial-up Connections** icon.

10. In the **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then click **Properties**.

11. Select **Internet Protocol TCP/IP** and ensure that the check box beside the text is selected. Click **Properties**.

12. In the **Internet Protocol (TCP/IP) Properties** dialog box, click the Obtain an IP address automatically option button. Also click the Obtain DNS server address automatically option button.

13. Click **OK** twice to confirm your changes and close the windows, and then close the **Control Panel** window.

3.1.2 Configuring Static IP Address

Most users need not to configure static IP settings. Automatic configuration is appropriate in most cases.

For information about static IP configuration, see the operating system documentation or online help.

Note: Make sure that the IP address of the client is on the same subnet as the Ericsson W20. The IP address range of the Ericsson W20 subnet is displayed on the **LAN** page.

3.2 Wireless LAN Settings

This section provides a general description of what is required to make your wireless devices work with the Ericsson W20.

Before you follow the instructions below, you need to configure the Ericsson W20 wireless LAN settings, see section 2.6 – “Wireless LAN”.

3.2.1 Siting the Wireless PC

The coverage of the wireless LAN depends on a number of factors, including the distance between the Ericsson W20 and the PC and the occurrence of obstacles, such as walls and electrical equipment.

Guidelines on siting the hardware components of your wireless network are provided by your wireless LAN interface provider.

3.2.2 Installing the Wireless LAN Interface

Each PC on your wireless LAN must be fitted with a wireless LAN interface, such as a wireless network card. You also have to install the corresponding driver files for your particular wireless LAN interface on your PC. The driver

files and instructions on how to install them are provided together with the interface.

3.2.3 Configuring PC Access to the Ericsson W20

The configuration steps below will vary depending on both the operating system and the wireless LAN interface installed on the PC. These steps provide a basic outline. For specific instructions, refer to the documentation provided with your wireless LAN interface.

Configure the following wireless parameters on each of the wireless PCs:

- Set the wireless LAN interface to use **infrastructure mode**. This configures the PCs to access each other and the Internet through the Ericsson W20.
- Configure the **network name (SSID)** and **channel** to match the network name and channel configured on the Ericsson W20. This information can usually be obtained through WLAN scanning. The network name is case sensitive.
- If you are using Wired Equivalent Privacy (WEP) security, configure the same **encryption key** that is configured on the Ericsson W20.
- If you are using Wi-Fi Protected Access (WPA or WPA2) security, configure the same **pass phrase** that is configured on the Ericsson W20. The pass phrase is case sensitive.
- Configure the IP settings using the procedure described in section 3.1 – “Configuring Internet Settings”.

3.3 File Sharing Settings

When a USB mass storage device is connected to the Ericsson W20, information about the device is displayed on the **File Sharing** page.

In some cases, you have to make sure that your PC belongs to the same workgroup as the Ericsson W20. Follow the instructions in section 3.3.2 – “Checking Workgroup Settings” to check the workgroup on your PC.

If you want to configure a network drive mapping to a shared device, follow the instructions in section 3.3.3 – ”Setting Up a Mapping to a Storage Device”.

3.3.1 Accessing a Shared Device

To access a shared device from a PC using Windows 2000 or XP, follow the steps below:

1. In the Windows task bar, click the **Start** button, and then click **Run…**.
2. Type **\\<host name>\<share Name>** in the **Open** field. The **Host name** and **Share name** are displayed on the Ericsson W20 **File Sharing** page. Click **OK**.
3. The shared resource is displayed. Double-click on the shared file to open it.

3.3.2 Checking Workgroup Settings

The following sections include instructions on how to check the workgroup settings on a PC using Windows XP or 2000.

Windows XP

Follow the steps below to check the workgroup settings on a PC using Windows XP:

1. In the Windows task bar, click the **Start** button, and then click **Control Panel**. The **Control Panel** window is displayed.
2. If you are using Category View, click **Performance and Maintenance** and then **See basic information about your computer**. If you are using Classic View, double-click **System**. The **System Properties** window is displayed.
3. Click the **Computer Name** tab.
4. Click Change…. The **Computer Name Changes** window is displayed.
5. Make sure that the **Workgroup** name is exactly the same as on the Ericsson W20 **File Sharing** page. If not, you have to change the workgroup either on the PC or on the Ericsson W20.
6. If you decide to change the workgroup on the PC, type the correct name in the **Workgroup** field and click **OK**. If you do not want to make any changes, click **Cancel**. The **Computer Name Changes** window is closed.
7. If you have changed the workgroup settings, follow the instructions on the screen to restart the PC.

Windows 2000

Follow the steps below to check the workgroup settings on a PC using Windows 2000:

1. In the Windows task bar, click the **Start** button, and then click **Settings** and **Control Panel**. The **Control Panel** window is displayed.

2. Double-click the **System** icon. The **System Properties** window is displayed.

3. On the **Network Identification** tab, click **Properties**. The **Identification Changes** window is displayed.

4. Make sure that **Workgroup** is selected in the **Member of** section and that the name of the workgroup is exactly the same as on the Ericsson W20 **File Sharing** page. If not, select the **Workgroup** option and type the name in the field. If there is already a workgroup name, although not the same as on the Ericsson W20, you have to change the workgroup either on the PC or on the Ericsson W20.

5. If you have made any changes, click **OK**. Otherwise, click **Cancel**. The **Identification Changes** window is closed.

6. If you have changed the workgroup settings, follow the instructions on the screen to restart the PC.

3.3.3 Setting Up a Mapping to a Storage Device

The following sections include instructions on how to configure a mapping to a mass storage device from a PC using Windows XP or 2000.

Windows XP

Follow the steps below to set up a connection to a shared storage device from a PC using Windows XP:

1. In the Windows task bar, click the **Start** button, and then click **My Computer**. The **My Computer** window is displayed.

2. From the **Tools** menu, select **Map Network Drive…**. The **My Network Drive** window is displayed.

3. Select a drive that is not already used from the **Drive** list.

4. In the **Folder** field, type **`\\<host_name>\<share_name>`** or click **Browse…** to locate the device. You find the host name and share name on the **File Sharing** page.

5. Click **Finish**. The **Map Network Drive** window is closed. The device is displayed in the **My Computer** window as a new partition.

Windows 2000

Follow the steps below to configure a connection to a shared storage device from a PC using Windows 2000:

1. Right-click the **My Computer** icon and select **Map Network Drive...** The **Map Network Drive** window is displayed.

2. Select a drive that is not already used from the **Drive** list.

3. In the **Folder** field, type **`\\<host_name>\<share_name>`** or click **Browse…** to locate the device. You find the host name and share name on the **File Sharing** page.

4. Click **Finish**. The **Map Network Drive** window is closed. The device is displayed in the **My Computer** window as a new partition.

4 Trouble-Shooting

This chapter describes how to solve a number of issues that could occur during installation, configuration, and use of the Ericsson W20. More information is available at **www.ericsson.com/fwt**.

Before you try any of the methods described in this chapter, make sure that the connected cables are securely inserted and that the **Power** indicator on the Ericsson W20 is green.

If none of the suggested methods solve your problem, you are recommended to:

1. Restart the Ericsson W20.
2. Reset the Ericsson W20 to factory default configuration.
3. Contact your service provider.

To restart the Ericsson W20, click the **Restart** on the **System** web page. If you cannot access the Ericsson W20 web pages, remove the power cable to disconnect the Ericsson W20 from power and wait a moment before reconnecting the cable.

To reset the settings to factory default, disconnect the Ericsson W20 from power by removing the power cable. Then use a tip of a pen to press the **Reset** button while reconnecting the power cable. Keep the **Reset** button pressed for at least 20 seconds.

The factory default configuration contains the original settings of your Ericsson W20. When you install your Ericsson W20 and access the web pages for the first time, the configuration file contains the factory default configuration.

Note: A reset to factory default configuration cannot be undone. If you reset the Ericsson W20 to default configuration, all your previous configuration changes are replaced. If you have previously changed the user name and password, the **User Login** page will be displayed. You have to login to the web pages with the default user name and password (**`user`** in both fields).

4.1 No Access to Ericsson W20 Web Pages

If you cannot access the Ericsson W20 internal web pages, take the following actions to identify and solve the problem:

- Check that the PC is configured to obtain an IP address automatically using DHCP. If not, change the PC TCP/IP settings. For instructions, see section 3.1.1 – “Obtaining IP Settings Automatically” or the manual of your operating system.
- If the W20 IP address has been changed and you do not know the current IP address, use the **Reset** button to reset the Ericsson W20 to factory default configuration (see above). This will set the IP address to 192.168.1.1 and the web page address to **`http://192.168.1.1`**.
- Make sure you are using the correct login details. If the default password has been changed and you do not know the current password, use the **Reset** button to reset the Ericsson W20 to factory default configuration (see above). This will reset the login details to default values. The default user name and password are “user”.
- If the PC is connected to the Ericsson W20 via an Ethernet cable, check that at least one of the corresponding **LAN** connector indicators is illuminated. If not, make sure that the cable is properly connected or try with another Ethernet cable.
- If you are using a wireless PC, make sure that the **Wireless LAN** indicator on the front panel of the Ericsson W20 unit is illuminated. If not, connect an Ethernet cable between the PC and the Ericsson W20 to establish a connection. The wired connection is required for the initial wireless LAN configuration of the Ericsson W20.

4.2 No Internet Access

If you cannot access the Internet from any of your local devices, take the following actions to identify and solve the problem:

- On the **Internet** page, make sure that the **Link status** is `up` and that an **IP address** is defined.
- Make sure that the GSM/UMTS antenna is properly connected and tightened to the Ericsson W20 antenna connector.
- Check the **Alarm** indicator on the front panel of the Ericsson W20 unit. If it is red, see the information in the **Alarms** section on the **Overview** page.

- On the **Internet** page, check that the **PIN** field is filled in and that there is no error message beside this field. If there is a message saying `Insert SIM`, verify that a valid SIM card is correctly inserted and then retype the PIN code on the **Internet** page. If the message says `Set PIN`, only retype the PIN code. If the `SIM blocked` message is displayed, the PUK is required to unblock the card.

- On the **Internet** page, check that the APN is correctly entered in the **APN (3G) and APN (2G)** fields.

- On the **Internet** page, verify that the mobile network signal quality indicator displays at least one bar. If not, move the Ericsson W20 or attach an external antenna (indoor window or outdoor roof mounted). External antennas are available as accessories to the Ericsson W20.

- Make sure that the LAN or WLAN connection is established. For trouble-shooting see section 4.5 – “No LAN Connection” or 4.6 – “No Wireless LAN Connection”.

4.3 Slow or Intermittent Internet Connection

If your Internet connection is unacceptable slow or regularly dropping, take the following actions to identify and solve the problem:

- On the **Internet** page, verify that the **Connection** is `HSDPA` or `UMTS`. If not, move the Ericsson W20 or attach an external antenna (indoor window or outdoor roof mounted). External antennas are available as accessories to the Ericsson W20.

- On the **Internet** page, verify that the mobile network signal quality indicator displays at least two bars. If not, try to move the Ericsson W20 or attach an external antenna.

4.4 No Access to a Certain Internet Application

If you cannot access a certain Internet application or specific type of data, take the following actions to identify and solve the problem:

- If the application uses FTP or TFTP, check the **NAT** page to make sure that the ALG supporting the Internet application is enabled.

- If the application requires UPnP IDG, check that **UPnP IDG** is enabled on the **NAT** page.

4.5 No LAN Connection

If you cannot access the local network from a PC that is connected to one of the LAN ports on the Ericsson W20, or to an Ethernet switch or hub that is connected to the Ericsson W20, take the following actions to identify and solve the problem:

- Check that the corresponding **LAN** connector indicator is green. If not, check that the Ethernet cable(s) is properly connected.
- Check that the PC is configured to obtain IP address automatically using DHCP. If not, change the PC TCP/IP settings. For instructions, see section 3.1.1 – “Obtaining IP Settings Automatically” or refer to the manual of your operating system.

4.6 No Wireless LAN Connection

If you cannot access the local network from a wireless device, take the following actions to identify and solve the problem:

- Check that the **Wireless LAN** indicator on front panel of the Ericsson W20 unit is illuminated. If not, connect an Ethernet cable between the PC and the Ericsson W20 to establish a connection. The wired connection is required for the initial wireless LAN configuration of the Ericsson W20.
- Verify that the wireless LAN interface installed on the wireless client is active.
- Move the Ericsson W20 to another location. Make sure that the mobile network signal is still acceptable before finalizing the installation.
- Check that the **Transmit power [dBm]** on the **Wireless LAN** page is configured in accordance with your requirements on wireless network coverage. The maximum transmit power value is “20”.
- Configure the Ericsson W20 wireless LAN authentication method to `Open`. This will verify if the wireless LAN connection is working without encryption. If so, the problem is related to the security settings. See the information below to get help to identify the problem.
- Verify that the operating system and wireless LAN interface of the client supports the Ericsson W20 authentication and encryption method (WEP 64-bit, WEP 128-bit, WPA, or WPA2). The Ericsson W20 security settings are displayed on the **Wireless LAN** web page. If the security method is not supported, configure the Ericsson W20 to use another method.

- Verify that the network name (SSID) on the Ericsson W20 and the wireless client are the same. Note that the network name is case sensitive.
- If you are using WEP, make sure that the encryption key length (64-bit or 128-bit) is the same on the Ericsson W20 and the wireless client.
- If you are using WEP, make sure that the wireless client is configured with the same encryption key as the Ericsson W20. Check that the encryption key consists of hexadecimal characters only.
- If you are using WPA or WPA2, make sure that the pass phrase is the same on the Ericsson W20 and the wireless client. Note that the pass phrase is case sensitive.
- If Whitelist is enabled, make sure that the wireless client is included on this list.
- If the wireless client uses a static IP address, make sure that this IP address is on the same subnet as the Ericsson W20. For instructions on how to check the client's IP address, see the operating system documentation or online help. The W20 IP address and subnet mask is displayed on the **LAN** page.
- Make sure that your Ericsson W20 network does not use the same radio channel as other wireless devices in the premises, for example security systems. The radio channel is displayed on the **Wireless LAN** page. To avoid interference, let the Ericsson W20 select a channel automatically (`Auto`) or manually change the radio channel currently used.
- Keep the Ericsson W20 away from electrical devices that disturb the radio signals, for example microwave ovens.

4.7 Slow or Intermittent Wireless LAN Connection

If your wireless connections to the local network are unacceptable slow or regularly dropping, take the following actions to identify and solve the problem:

- Move the Ericsson W20 to another location. Make sure that the mobile network signal is still acceptable before finalizing the installation.
- Make sure that your Ericsson W20 network does not use the same radio channel as other wireless devices in the premises, for example security systems. The radio channel is displayed on the **Wireless LAN** page. To avoid interference, let the Ericsson W20 select a channel

automatically (`Auto`) or manually change the radio channel currently used.

- Keep the Ericsson W20 away from electrical devices that disturb the radio frequency signals, for example microwave ovens.
- Check that the **Transmit power [dBm]** on the **Wireless LAN** page is configured in accordance with your requirements on wireless network coverage. The maximum (default) value is “20”.

4.8 No Access to Shared Files

If you cannot access a shared storage device that is connected to one of the USB connectors of the Ericsson W20, take the following action to identify and solve the problem:

- Release (use the **Stop** button on the **File Sharing** web page) and disconnect the USB device from the Ericsson W20, and then reconnect it.
- Make sure that the PC belongs to the same workgroup as the Ericsson W20. For instructions, see section 3.3 – “File Sharing Settings”. The Ericsson W20 workgroup is displayed on the **File Sharing** web page.
- Make sure that the device is using the FAT file system. Note that only one partition is available.

Glossary

2G
The second generation wireless communications technology, introducing digital voice encoding. Low speed data services are supported.

3G
The third-generation wireless communications technology. 3G includes enhanced voice, data, and video capabilities, improved availability, broad bandwith and high speed.

ALG
Application Layer Gateway.
An ALG provides a translation and transportation service for an Internet application. If necessary, the contents of a data packet are modified and if a secondary port is required, the ALG will open one.

AES
Advanced Encryption Standard.
An encryption method used by WPA2. Compared with TKIP, AES offers a higher level of security and is approved for sensitive corporate and government data transmission.

AP
Access point.
An Internet device that seamlessly connects wired and wireless networks. Access points attached to a wired network support the creation of multiple radio cells that enable roaming throughout a facility.

APN
Access Point Name.
A reference to the Internet access point of an Service provider.

Authentication
The process to verify the identity of a user requesting network access.

Broadcasting
To simultaneously send the same message to multiple recipients.

CDMA
Code Division Multiple Access.
A general term describing mobile air interface technologies based on “spread spectrum” digital radio access methods, offering benefits including increased capacity, quality and security. CDMA is fundamental to 3G mobile systems.

Channel
A channel determines the radio frequency used by an access point to pass data traffic to wireless clients. Available channels depend on region specific regulations.

DHCP
Dynamic Host Configuration Protocol.
A protocol used to provide a framework for passing configuration information on a TCP/IP network.

DHCP server
Dynamic Host Configuration Protocol server.
A configuration server, capable of configuring network devices with a variety of information required for their operation.

DNS
Domain Name System (or Service).
The way that Internet domain names are located and translated into IP addresses.

EDGE
Enhanced Data rates for Global Evolution.
A technology that gives GSM the capacity to handle services for the third generation of mobile telephony. EDGE provides three times the data capacity of GPRS.

Encryption
The translation of data into a form that cannot be easily understood by unauthorized users. Data passing between an access point and network clients can use encryption to protect from interception and eavesdropping.

Encryption key
A sequence of characters used for data encryption. The encrypted data can only be sent and received by users with access to the encryption key.

Ethernet
The most common LAN technology, used in both wired and wireless networks. An Ethernet LAN typically uses coaxial cables or special grades of twisted pair wires.

FAT
File Allocation Table.
A file system used for the Microsoft Windows operating systems.

FTP
File Transfer Protocol.
A protocol for exchanging files over the Internet. FTP is most commonly used to download and upload files from and to servers.

FWT
Fixed Wireless Terminal.
A terminal providing residential and small office users with broadband services like high-speed data, voice, and fax connectivity. Internet access is provided through the mobile communications network.

Gateway
A network point that acts as an entrance to another network.

GPRS
General Packet Radio Service.
A packet-based mobile communications system building on GSM. Advantages over standard GSM include higher data transmission speeds, more efficient use of radio resources and continuous connection to the network to facilitate more advanced non-voice services.

GSM
Global System for Mobile Communication.
The second generation mobile system originally developed in Europe. GSM is oriented to voice and circuit mode data.

Host
A device (usually a computer) connected to a network.

HSDPA
High Speed Downlink Packet Access.
The new standardized evolution of WCDMA that will enable downlink speeds of up to 14 Mbps.

IGD
Internet Gateway Device.
See UPnP IGD.

IMEI
International Mobile Equipment Identity.
The IMEI number of a mobile device is a 15 digit unique code that is used to identify the device on a network.

IP
Internet Protocol.
A part of a suite of protocols that effectively defines the Internet as we know it. Specifies addressing and control information for routing data packets over networks.

IP address
The address of a host on the Internet, consisting of four numbers, each from 0 to 255, separated by periods, for example 192.168.1.1. An IP address consists of a network ID that identifies the particular network the host belongs to, and a host ID uniquely identifying the host itself on that network. A network mask is used to define the network ID and the host ID.

LAN
Local Area Network.
A computer network limited to the immediate area, such as a home, office, or small building.

Lease time
The amount of time that an dynamically assigned IP address will be valid for a specific device.

MAC address
Media Access Control address.
The permanent hardware address of a device assigned by its manufacturer. MAC addresses are expressed as six pairs of hexadecimal characters (0-9 and A-F), with each pair separated by colons. For example: 1a:2b:23:5b:66:9a

Mass Storage
Various techniques and devices used to store large amounts of data. An example of a mass storage device is a hard disk.

NAT
Network Address Translation.
A service performed by many routers that translates a network's IP address into a private IP address for each device on the LAN. Only the router and the LAN know these addresses; the outside world sees only the public IP address when talking to a computer on the LAN.

Network mask
A sequence of bits applied to an IP address to select the network ID while ignoring the host ID. Bits set to 1 mean "select this bit" while bits set to 0 mean "ignore this bit". For example, if the network mask 255.255.255.0 is applied to the IP address 100.10.50.1, the network ID is 100.10.50, and the host ID is 1. See also subnet mask.

Packet
The units of data transmitted on a network. Each packet contains a payload (the data), plus overhead information such as where it came from (source address) and where it will go (destination address).

Pass Phrase
A secret password used for WPA and WPA2 wireless data encryption. The encryption is based on a WPA master key that is derived from the pass phrase and the network name (SSID).

PC
Personal Computer.
A computer designed for use by one person at a time.

PIN
Personal Identification Number.
A secret code used for individual access to for example computer networks. Generally, a PIN is made up of 4 to 10 digits.

PPP
Point-to-Point Protocol.
A protocol for serial data transmission that is used to carry IP (and other protocol) data between the service provider and your computer.

Private IP Address
A private IP Address is typically assigned to a client on a LAN (Local Area Network) and is not used outside the LAN. Private IP addresses are typically used when multiple computers share the same Internet connection.

Protocol
A set of rules governing the transmission of data. In order for a data transmission to work, both ends of the connection have to follow the rules of the protocol.

PSK
Pre-Shared Key.
An easy-to-set-up home mode for network access allowing for manually entering of keys and pass phrases.

Public IP Address
A public IP address is a globally unique number that identifies a device on the Internet. Anyone on the Internet can connect to the device using the public address.

PUK
Personal Unblocking Key.
A secret code made up of 8 to 10 digits. The PUK is used to reativate a SIM card that has been blocked.

Roaming
The movement between microcells in a radio network. Roaming service is used to provide network access independent of where the user resides and what service provider that is running the network.

Routing
The forwarding of data between a local network and the Internet on the most efficient route, based on the data's destination IP address and current network conditions. A device that performs routing is called a router.

RSSI
Received Signal Strength Indicator.
The RSSI is an indicator of the strength of the received radio signal.

SIM
Subscriber Identity Module.
The "smart card" required by all mobile customers to operate their phones. Carries authentication, billing and information about the individual subscriber, as well as address book and other personalized information.

SSID
Service Set Identifier.
A unique network name that differentiates one wireless device from another. Wireless PCs configured with the same SSID can access the same network.

Subnet
A portion of a network. The subnet is distinguished from the larger network by a subnet mask that selects some of the computers of the network and excludes all others. The subnet's devices remain physically connected to the rest of the network, but they are treated as though they were on a separate network.

Subnet mask
A mask that defines a subnet. See also Network mask.

Switching
Routing data traffic by setting up temporary connections between two or more network points. This will take the data toward its intended destination.

TCP
Transmission Control Protocol.
See TCP/IP.

TCP/IP
Transmission Control Protocol / Internet Protocol.
The basic protocols used on the Internet. TCP is responsible for dividing data up into packets for delivery and reassembling them at the destination. IP is responsible for delivering the packets from source to destination. When TCP and IP are bundled with higher-level applications such as HTTP, FTP, Telnet, and so on, TCP/IP refers to this whole suite of protocols.

TFTP
Trivial File Transfer Protocol.
A TCP/IP protocol commonly used for software downloads.

TKIP
Temporal Key Integrity Protocol.
A protocol used for WPA data encryption. It ensures that a unique master key is generated for each packet, supports message integrity and sequencing rules, and supports re-keying mechanisms. TKIP avoids the problems of WEP static keys by dynamically changing data encryption keys.

UDP
User Datagram Protocol.
A connection-less transport service that dispenses with the reliability services provided by TCP. UDP gives applications a direct interface with IP and the ability to address a particular application process running on a host via a port number, without setting up a connection session.

UPnP
Universal Plug and Play.
A networking architecture that provides compatibility among networking equipment, software, or between equipment and software.

UPnP IGD
UPnP Internet Gateway Device.
A standard used by UPnP aware clients, such as MSN Messenger, to work properly from behind a NAT.

UMTS
Universal Mobile Telecommunications Service.
A 3G wireless system that delivers high-bandwidth data and voice services to mobile users. UMTS has an air interface based on WCDMA and a core network based on the General Packet Radio Service (GPRS).

URL
Uniform Resource Locator.
The address of a resource on the Internet.

USB
Universal Serial Bus.
An interface for connecting peripherals such as storage devices and printers to a host.

WAN
Wide Area Network.
A network of computers that covers a large geographical distance. With respect to the Ericsson W20, WAN refers to the Internet.

WCDMA
Wideband CDMA.
The radio access technology for wideband wireless access supporting 3G services. It allows very high speed multimedia services like wireless Internet access and videoconferencing. WCDMA is also known as CDMA DS (Direct Sequence).

WEP
Wired Equivalent Privacy.
A method for data encryption on wireless networks. Data is encrypted into blocks of either 64 bits length or 128 bits length. The encrypted data can only be sent and received by users with access to a private encryption key.

Wireless
A common term used to describe telecommunications in which radio waves (rather than some form of wire) carry the signal over part or all of the communication path.

WLAN
Wireless Local Area Network.
A WLAN is a network in which a mobile user can connect to a LAN through a wireless (radio) connection. The IEEE 802.11 standard specifies the technologies for wireless LANs.

WPA
Wi-Fi Protected Access.
An authentication and encryption standard for wireless networks. WPA addresses the security limitations of WEP, providing a stronger data encryption method; TKIP. WPA data encryption is based on a WPA master key. The master key is derived from the pass phrase and the network name (SSID) of the device.

WPA2
Wi-Fi Protected Access 2.
An enhanced version of WPA. For data encryption, WPA2 uses AES instead of TKIP.

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